Acid Rain Program Policy Manual

Update #12

U.S. Environmental Protection Agency
Clean Air Markets Division
Washington, D.C.

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INTRODUCTION

This document provides the twelfth update to the Acid Rain Program Policy Manual. It is the first update since the Policy Manual underwent extensive revisions in October, 1999. This update should be used with the October 14, 1999 Revised Acid Rain Program Policy Manual. Table A, below, provides a list of the questions in this update and their status (new or revised). Two new sections, 22 and 24, are also included. Section 22 deals with Subtractive Configurations and Section 24 covers NO_x Apportionment. Finally, the contact list (Appendix A) has been updated and the "Quarterly Report Review Process for Determining Final Annual Data" (part of Appendix C) has been revised (the other documents from Appendix C have not been revised). Any questions from the October 14, 1999 Revised Acid Rain Program Policy Manual that are not revised remain in effect.

Table A: Questions Contained in Update #12

Question Number	Status	Question Number	Status	Question Number	Status
1.13	New	10.31	New	22.3	New
1.14	New	10.32	New	22.4	New
1.15	New	10.33	New	22.5	New
1.16	New	10.34	New	22.6	New
1.17	New	10.35	New	22.7	New
2.16	New	10.36	New	22.8	New
3.26	New	10.37	New	22.9	New
3.27	New	11.6	New	22.10	New
3.28	New	13.4	Revised	22.11	New
3.29	New	13.5	Revised	22.12	New
3.30	New	13.6	Revised	24.1	New
3.31	New	14.90	New	24.2	New
3.32	New	14.91	New	24.3	New
3.33	New	14.92	New	24.4	New
3.34	New	14.93	New	24.5	New
3.35	New	14.94	New	24.6	New
4.23	New	14.95	New	24.7	New
5.6	Revised	14.96	New	24.8	New
6.5	New	14.97	New	24.9	New
7.22	New	14.98	New	24.10	New
8.30	New	14.99	New	24.11	New
8.31	New	14.100	New	24.12	New
8.32	New	14.101	New	24.13	New
8.33	New	14.102	New	25.13	New
8.34	New	15.28	New	25.14	New
8.35	New	15.29	New	25.15	New
10.28	New	15.30	New	26.19	New
10.29	New	22.1	New	29.1	New
10.30	New	22.2	New		

Question 1.13

Topic: Policy Manual Updates

Question: Are past Policy Manual updates still valid?

Answer: Yes, but only if the particular question is in the Revised Policy Manual (dated October 14, 1999). The Revised Policy Manual includes all old questions (including those distributed through updates) that are still valid for policy purposes. Most questions have been revised, so you should reread the answers and make certain the substance is unchanged.

References: N/A

Key Words: N/A

History: First published in March 2000, Update #12

Question 1.14

Topic: Audit Checklist

Question: Is EPA planning on revising the Level 2 audit checklist which is included in the Acid Rain CEMS Field Audit Manual and used when conducting field audits?

Answer: Not at this time. For items that are not applicable following the Part 75 revisions, you may just put "N/A" on the form. You should make sure you are using the latest version of the form, available from the web site. You may also alter the format if you choose.

References: N/A

Key Words: N/A

History: First published in March 2000, Update #12

Question 1.15

Topic: PEMS

Question: Is EPA considering allowing the use of PEMS?

Answer: EPA is conducting a PEMS study. The Agency has done some preliminary background work, but extensive field tests are needed to determine whether PEMS should be allowed to be used under the Acid Rain Program or Subpart H.

References: N/A

Key Words: Predictive emissions monitoring systems

History: First published in March 2000, Update #12

Question 1.16

Topic: Exemptions From Part 60 Requirements

Question: My facility is subject to continuous monitoring requirements under both 40 CFR Part 60 and 40 CFR Part 75. The May 26, 1999 revisions to Part 75 allow us to claim an exemption from linearity testing of our gas monitors for quarters in which the unit operates for fewer than 168 hours. May I obtain a similar exemption from the Part 60, Appendix F quality assurance provisions for quarterly cylinder gas audits (which are similar to Part 75 linearity checks) for quarters in which the unit operates for fewer than 168 hours?

Answer: You may only obtain an exemption from the Part 60 cylinder gas audit (CGA) requirement if the permitting authority allows it. When a source is regulated under different programs with similar rule provisions (in this case, linearity checks and cylinder gas audits), the facility must comply with each of these rule provisions separately, unless the regulatory agency allows exceptions to this. Therefore, unless the permitting authority in the region or state stipulates otherwise, you would have to follow the procedures of Part 60, Appendix F, which require quarterly cylinder gas audits, even for quarters in which the unit operates for fewer than 168 hours.

References: 40 CFR Part 60, Appendix F; 40 CFR Part 75, Appendix B, Section 2.2.3(f)

Key Words: Quality assurance

History: First published in March 2000, Update #12

Question 1.17

Topic: Rule Revisions and OTC NBP Sources

Question: My source is an OTC NO_x Budget Program (NBP) source and is not subject to the Acid Rain Program. Can we take advantage of some of the new Part 75 rule revisions that were promulgated on May 26, 1999?

Answer: You may only use the new Part 75 rule provisions if :

(1) Your State permits use of the revised rule; and

(2) The EDR version in which you report data (i.e., v.2.0 or v.2.1) is consistent with the new Part 75 provision(s) that you intend to use.

The best way to ensure that condition (2) above is met is to fully implement the NO_x mass emissions provisions of Subpart H of Part 75 (see §§ 75.70 through 75.75). Note that if you choose this option, you may no longer use any monitoring or reporting option allowed by the January, 1997 NO_x Budget Program Guidance, if the option is not allowed under Part 75. You must also upgrade your DAHS software from EDR v2.0 to EDR v2.1.

If you want to implement some, but not all, of the new Part 75 provisions and wish to continue reporting in EDR v2.0, you must petition your State for permission to do so. EPA advises States to use discretion in granting such petitions. As a general guideline, petitions are considered approvable if the rule provisions that the source is requesting permission to use are consistent with EDR v2.0 reporting. However, if implementation of the new rule provisions requires any of the new record types or new data fields associated with EDR v2.1, the State should carefully assess the potential impact of not receiving the extra information that EDR v2.1 would provide. If the State considers the impact of not receiving that information to be minimal, or if the State and the facility can agree upon an alternative way of documenting compliance with the new rule provisions (e.g., use of EDR RT 910, the electronic cover letter), then the petition may be approved.

Note that regardless of whether the State approves any such petitions, NO_x Budget sources must report all required data in a single EDR version. You may not report in a format consisting of EDR v2.0 with a few v2.1 records added on, nor may you report in EDR v2.1 with a few v2.0 records added on.

The Clean Air Markets Division will issue written guidance to the States to assist them in evaluating the types of petitions described in the previous paragraphs. Until that guidance is finalized, States receiving such petitions should make case-by-case determinations and should contact EPA if any questions or issues arise.

References: N/A

Key Words: Applicability

History: First published in March 2000, Update #12

Question 2.16

Topic: Use of Default SO_2 Value

Question: I have a coal-fired unit with certified SO_2 and flow monitoring systems. The unit occasionally fires gaseous fuel. According to § 75.11(e)(3)(iii), the DAHS must automatically substitute a 2.0 ppm default for hours when: (a) the unit is combusting gaseous fuel that meets the definition of "very low sulfur fuel" in § 72.2; and (b) the measured SO_2 concentration reading is less than 2.0 ppm. Does EPA require me to demonstrate that my gaseous fuel qualifies as very low sulfur fuel before I use the 2.0 ppm default value?

Answer: No demonstration is required. The definition of very low sulfur fuel in § 72.2 includes the following: "pipeline natural gas" (as defined in § 72.2), "natural gas" (as defined in § 72.2), and any other gaseous fuel which has 20 grains or less of total sulfur. If, based on a knowledge of the composition of the gaseous fuel being combusted (e.g., from contract specifications or historical fuel sampling information), you believe the fuel qualifies as very low sulfur fuel, report the 2.0 ppm default SO_2 concentration for gas-fired hours when the bias-adjusted SO_2 concentration is less than 2.0 ppm.

References: § 72.2; § 75.11(e)(3)(iii)

Key Words: SO_2 monitoring, Reporting

History: First published in March 2000, Update #12

Question 3.26

Topic: Test Method 2H - Restrictions on Use of Default Wall Effects Adjustment Factors (WAFs)

Question: Can the default WAF specified in Section 8.1 of Method 2H be applied to the average velocity unadjusted for wall effects obtained from a Method 1 traverse regardless of the number of points in the Method 1 traverse?

Answer: The default WAF may only be applied to the average velocity unadjusted for wall effects obtained from a Method 1 traverse consisting of 12 or 16 traverse points. A default WAF may not be applied to the average velocity obtained from a Method 1 traverse consisting of more than 16 traverse points.

The default WAF values specified in Method 2H (i.e., 0.9900 for brick and mortar stacks and 0.9950 for all other types of stacks) were derived based on field data from 16-point Method 1 traverses. Consistent with the provisions of section 12.7.2, these default WAFs may be applied to the average velocity unadjusted for wall effects "obtained from runs in which the number of Method 1 traverse points sampled does not exceed the number of traverse points in the runs used to derive the wall effects adjustment factor." That is, the default WAF may be used with Method 1 traverses consisting of 12 or 16 points, but not with Method 1 traverses consisting of more than 16 points.

Without this restriction, velocity decay would be double-counted in traverses consisting of more than 16 points (once in the additional Method 1 traverse points close to the wall and then again when the default wall effects adjustment factor is applied to the results of the Method 1 traverse).

References: 40 CFR Part 60, Appendix A, Method 2H, Sections 8.1 and 12.7.2

Key Words: Certification, Diagnostic testing, Flow monitoring, Recertification, Relative accuracy

History: First published in March 2000, Update #12

Question 3.27

Topic: Test Method 2H -- Qualification for Default Value

Question: For use of the default wall effects adjustment factor (WAF) values under Method 2H, do we have to do anything to qualify?

Answer: No, just report the default WAF value in EDR v2.1, and if you are using the 1.0% default value, declare that you have a brick or mortar stack.

References: 40 CFR Part 60, Appendix A, Method 2H

Key Words: Flow monitoring, RATA, Wall effects adjustment factor

History: First published in March 2000, Update #12

Question 3.28

Topic: Test Method 2H -- Gunite Stack

Question: To use the 1.0% default wall effects adjustment factor (WAF) value in Method 2H, does the entire stack have to be brick or mortar or just the lining? What about gunite?

Answer: To use the 1% default WAF, the stack lining must be brick or mortar. Gunite is not considered to be brick or mortar.

References: 40 CFR Part 60, Appendix A, Method 2H

Key Words: Flow monitoring, RATA, Wall effects adjustment factor

History: First published in March 2000, Update #12

Question 3.29

Topic: Use of Spherical Probes for Flow Test Methods

Question: What is the advantage of using the spherical probe for the new flow methods?

Answer: In low pitch angle applications, a spherical probe may be easier to read than a DA or DAT probe. This is likely to be less of a consideration, however, if an electronic manometer is used to read the pitch angle pressure, as recommended in Section 6.4 of Method 2F.

References: N/A

Key Words: Flow monitoring, RATA

History: First published in March 2000, Update #12

Question 3.30

Topic: Calibration of Probe

Question: If, under the new flow methods, we calibrate the probe in the wind tunnel at 60 and 90 fps, can we use it at any velocity?

Answer: When using a 3-D probe (i.e., DA, DAT, or spherical) either under Method 2F or in yaw-determination mode under Method 2G, you may use the probe at any average velocity greater than or equal to 20 fps if it has been calibrated at 60 and 90 fps. That is, a 3-D probe may not be used under Method 2F or 2G if the average velocity is less than 20 fps.

Under Method 2G, if you calibrate a Type S probe at 60 and 90 fps, you may use the probe at any average velocity greater than or equal to 30 fps. A Type S probe under Method 2G may be used at average velocities less than 30 fps, but only if one of the two velocity settings used when calibrating the probe is less than or equal to the average velocity encountered in the field. This must be verified in accordance with the procedures specified in Section 12.4 of Method 2G. Also, the QA/QC requirements in Sections 10.6.12 through 10.6.14 of Method 2G for calibration coefficients must be met at the chosen calibration velocity settings.

References: 40 CFR Part 60, Appendix A, Methods 2F and 2G

Key Words: Flow monitoring, RATA

History: First published in March 2000, Update #12

Question 3.31

Topic: Use of 3D Probe for Methods 2F and 2H

Question: If we use a 3D probe for Method 2F, must we use a 3D probe for the WAF measurements under Method 2H?

Answer: Yes, you must use the same type of probe.

References: 40 CFR Part 60, Appendix A, Methods 2F and 2H

Key Words: Flow monitoring, RATA, Wall effects adjustment factor

History: First published in March 2000, Update #12

Question 3.32

Topic: Use of WAF for Square and Rectangular Stacks

Question: Are there any plans to expand the use of the WAF to square and rectangular stacks or ducts? Why can't we just use a default value?

Answer: EPA will investigate this if budget resources allow. Neither a measured nor a default WAF value may be used until the effects near the wall in a square or rectangular stack or duct have been properly studied by EPA.

References: 40 CFR Part 60, Appendix A, Method 2H

Key Words: Flow monitoring, RATA, Wall effects adjustment factor

History: First published in March 2000, Update #12

Question 3.33

Topic: Test Method 2H -- Traverse Points

Question: How many Method 1 traverse points must we use when a calculated wall effects adjustment factor (WAF) is determined using Method 2H?

Answer: You must perform a Method 1 velocity traverse of a least 16 points for each run used in the calculation of the WAF.

References: 40 CFR Part 60, Appendix A, Method 2H

Key Words: Flow monitoring, RATA, Wall effects adjustment factor

History: First published in March 2000, Update #12

Question 3.34

Topic: Minimum WAF

Question: Under the new flow methods, what if a source finds that it is getting a calculated wall effects adjustment factor (WAF) less than 0.9700 (i.e., more than a 3% reduction in the velocity calculated without Method 2H)? Can you do more than sixteen Method 1 traverse points and use a WAF value of less than 0.9700?

Answer: You may use more than sixteen Method 1 traverse points when a Method 2H calculated WAF is used. However, no matter how many Method 1 traverse points are used, you may not apply a calculated WAF that is less than 0.9700 for a complete wall effects traverse or 0.9800 for a partial wall effects traverse to the runs of a flow RATA.

It should be noted, however, that the actual calculated value of the WAF should be reported in column 109 of RT 614. Note that the August 1999 instructions for RT 614, column 109, in this regard, were incorrect (EPA has corrected this error in the January 20, 2000 revised EDR Version 2.1 Reporting Instructions).

For example, suppose that for a particular RATA run, you calculate a WAF of 0.9600, based on a complete wall effects traverse. You would report this measured WAF in column 109 of RT 614. However, you could not apply the

WAF of 0.9600 to the runs of the RATA, because when a complete wall effects traverse is performed, the lowest WAF that you are allowed to use is 0.9700. Report the actual WAF applied to the RATA runs (in this case, 0.9700) in column 115 of RT 614.

Also see Policy Question 3.15.

References: 40 CFR Part 60, Appendix A, Method 2H

Key Words: Flow monitoring, RATA, Wall effects adjustment factor

History: First published in March 2000, Update #12

Question 3.35

Topic: Test Methods 2 and 2H

Question: Isn't the wall effects adjustment factor (WAF) derived in Method 2H within the error band of Method 2?

Answer: By applying the WAF allowed by Method 2H, you are reducing potential systematic error that may result under Method 2 if velocity decay at the wall is not taken into account. The error band about the mean measured stack gas velocity characterizes the random error in Method 2 and is unrelated to the systematic error addressed by the WAF.

References: 40 CFR Part 60, Appendix A, Methods 2 and 2H

Key Words: Flow monitoring, RATA, Wall effects adjustment factor

History: First published in March 2000, Update #12

Question 4.23

Topic: Substitute Data for NO_x Emission Rate When Moisture Value Unavailable

Question: I use Equation 19-3 to calculate NO_x emission rate in lb/mmBtu. If, for a particular hour, quality-assured average NO_x concentration and O_2 concentration values are available, but a quality-assured average percent moisture value is unavailable, should I use substitute data for NO_x emission rate in RT 320?

Answer: No, because the moisture monitor is not a component of the NO_x-diluent monitoring system. Therefore, determine the appropriate substitute data value for percent moisture and use this value in Equation 19-3 to calculate the NO_x emission rate. Report the calculated NO_x emission rate as quality-assured in RT 320.

References: EDR v2.1 Instructions, RT 320

Key Words: NO_x emission rates

History: First published in March 2000, Update #12

Question 5.6 REVISED

Topic: Opacity Monitoring -- Exemption

Question: For a unit with a wet flue gas pollution control system, §75.14(b) allows an exemption from the requirement to install, certify, operate and maintain a continuous opacity monitoring system (COMS), if the owner or operator can "demonstrate that condensed water is present in the exhaust flue gas stream and would impede the accuracy of opacity measurements." What is expected for such a demonstration?

Answer: The designated representative should submit a petition for an exemption to the Director of the Clean Air Markets Division (formerly the Acid Rain Division) under § 75.66 that includes: a written statement, certified by the designated representative, that the unit has a wet flue gas pollution control system, and the results of procedures that demonstrate that the stack gas contains liquid water droplets.

The designated representative should use the following procedure to demonstrate whether liquid water droplets are present in the gas stream. Perform the procedures described in the Notes in Sections 1.2 and 2.3.5 of EPA Method 4 (see Appendix A to 40 CFR Part 60) to demonstrate that the effluent gas stream is saturated. These procedures must be performed under representative conditions and at the COMS location or, if no COMS is currently installed, at the location required by Performance Specification 1 in Appendix B of 40 CFR Part 60. The Note in Section 1.2 requires simultaneous determination of moisture content using two procedures, (1) the reference method (with impingers) and (2) using either a psychrometric chart or saturation vapor pressure tables with measured stack gas temperature. The Note in Section 2.3.5 requires two calculations of stack gas moisture content (one calculation using each of these two procedures). If the moisture content from procedure (2) above is significantly less than the moisture content from procedure (1) above, then the stack gas is saturated and is assumed to have condensed water present.

The Director of the Clean Air Markets Division will determine whether the petition meets these requirements, and whether to exempt the unit under § 75.14(b) from Part 75 opacity monitoring requirements.

EPA notes that installation of a COMS may be required both by the Acid Rain Program and by another Federal or State program. If you want approval of an alternative opacity monitoring approach under another program, then you must also meet the relevant requirements for that other program. For example,

§ 60.13(i)(1) in the General Provisions of the New Source Performance Standards (NSPS) regulations (40 CFR Part 60) requires submittal of an application to the Administrator, requesting permission to use an alternative monitoring approach in cases where: "... a continuous monitoring system or monitoring device specified by this part would not provide accurate measurements due to liquid water or other interferences caused by substances with the effluent gases." Therefore, in order to use an alternative opacity monitoring approach for a unit subject to NSPS, the owner or operator must submit an application (separate from the § 75.66 petition) to the Administrator for approval. (Note that in some cases, "the Administrator" refers to the EPA Regional Office and in other cases, where NSPS enforcement authority has been delegated, it refers to the State or local agency). The Regional, State, or local office must decide, on a case-by-case basis, whether the information submitted with the application adequately demonstrates that an alternative monitoring approach is justified. To ensure national consistency in such demonstrations, the Regional, State, and local offices should consult with EPA Headquarters.

References: § 75.14(b), § 75.66; 40 CFR 60.13(i)(1); 40 CFR Part 60, Appendix A, Method 4; 40 CFR Part 60, Appendix B, Performance Specification 1

Key Words: Control devices, Exemptions, Opacity monitoring

History: First published in November 1993, Update #2; revised in March 2000, Update #12

Question 6.5

Topic: Use of Diluent Cap With High Percent Moisture

Question: When using the diluent cap with Equations 19-3, 19-5, F-14A or F-17 it is possible to have unrepresentative or negative results if the percent moisture is high. How do I use these equations with the diluent cap?

Answer: The agency has developed special variations of these equations for use with the diluent cap. These equations are to be used during any hour in which the diluent cap is used in place of Equations 19-3, 19-5, F-14A, and F-17. These equations have been added to the EDR v2.1 instructions. When using these equations report each equation in RT 520 and use the correct formula ID in RTs 320 and 300 for each hour.

If you use Equation 19-3 for NO_x emission rate, use Equation 19-3D for any hour in which you use the diluent cap.

If you use Equation 19-5 for NO_x emission rate, use Equation 19-5D for any hour in which you use the diluent cap.

If you use Equation F-14A to determine percent CO_2 from percent O_2, use Equation F-14D for any hour in which you use the diluent cap.

If you use Equation F-17 for heat input, use Equation F-17D for any hour in which you use the diluent cap.

References: Appendix F, Equations F-14A and F-17; 40 CFR Part 60, Appendix A, RM 19

Key Words: Diluent cap

History: First published in March 2000, Update #12

Question 7.22

Topic: Definition of Like-kind Replacement Non-redundant Backup Analyzer

Question: What constitutes a like-kind replacement non-redundant backup analyzer, as described in § 75.20(d)(2)(ii)?

Answer: A like-kind replacement analyzer is one that uses the same method of sample collection (dilution-extractive, dry extractive, or in-situ) and analysis (for example, pulsed fluorescence, UV fluorescence, chemiluminescence) as the analyzer that it replaced. The like-kind replacement analyzer must also use the same probe and interface as the primary system and have the same span value. The full-scale range need not be identical, but must meet the guidelines in Section 2.1 of Appendix A.

References: § 75.20(d)(2)(ii); Appendix A, Section 2.1

Key Words: Like-kind replacement analyzer, Non-redundant backup monitors

History: First published in March 2000, Update #12

Question 8.30

Topic: Flow RATA Performance Specification

Question: How does the change to the flow RATA performance specification affect out-of-control status? If I passed a flow RATA at 12% in October of 1999, is the monitor out-of-control as of January 1, 2000 when the 10% specification takes effect?

Answer: No. If you tested and met the 15% standard in place in October, 1999, then the flow monitor would not be out-of-control on January 1, 2000. If you fail to meet the new 10% standard in a RATA completed on or after January 1, 2000 the flow monitor would be out-of-control.

References: Appendix A, Section 3.3.4

Key Words: Flow monitoring, RATA

History: First published in March 2000, Update #12

Question 8.31

Topic: RATA Frequency

Question: If I usually do RATA testing in the second quarter but one year I use the grace period and do the RATA in the third quarter, should I do the next RATA in the second or third quarter the following year? (The unit operates more than 168 hours each quarter and the RATA results allow an "annual" frequency.)

Answer: You should do the next RATA in the second quarter (see Appendix B, Section 2.3.3(c)). The grace period cannot be used to extend the deadline for the next required QA test.

References: Appendix B, Section 2.3.3(c)

Key Words: RATA

History: First published in March 2000, Update #12

Question 8.32

Topic: SO_2 RATA Exemption

Question: Our facility can burn #6 oil but doesn't -- we burn only natural gas. Can we take advantage of the SO_2 RATA exemption?

Answer: Yes. You may claim either: (1) an on-going exemption from SO_2 RATAs if your Designated Representative certifies that you never burn fuel with a sulfur content higher than "very low sulfur fuel" (as defined in § 72.2); or (2) a conditional exemption from SO_2 RATAs if you keep the usage of oil to 480 hours or less per year. In EDR v2.1, RT 697 is used to make these types of claims.

References: § 75.21(a)(9)

Key Words: RATA

History: First published in March 2000, Update #12

Question 8.33

Topic: Operating Level Definitions

Question: Can you clarify the definitions of the "low," "mid," and "high" operating levels in Section 6.5.2.1 of Appendix A to Part 75? Specifically, at the boundaries between adjacent levels, is 30.0% part of the low or mid level? Is 60.0% part of the mid or high level?

Answer: The "low" operating level extends from 0.0 to 30.0% of the range of operation, inclusive. The "mid" level is defined as >30.0% and $\leq$60.0% of the range of operation. The "high" level is defined as >60.0% of the range of operation. These boundary conditions were incorrectly represented in the August 16, 1999 revised EDR v2.1 and the accompanying reporting instructions (see instructions for RT 695). EPA has corrected this error in the January 20, 2000 revised EDR v2.1 and accompanying instructions.

References: Appendix A, Section 6.5.2.1(b)

Key Words: Flow monitors

History: First published in March 2000, Update #12

Question 8.34

Topic: Range of Operation

Question: The range of operation as defined in Section 6.5.2.1 of Appendix A to Part 75 extends from the "minimum safe, stable load" to the "maximum sustainable load." What is meant by the "minimum safe, stable load"?

Answer: The minimum safe, stable load is not precisely defined in either Part 72 or Part 75 of the Acid Rain rules. In the absence of such a definition, use the following guidelines: the minimum safe, stable load is the lowest load at which a unit is capable of being held for an extended period of time, without creating an unsafe or unstable operating condition. If the boiler manufacturer recommends that the unit not be operated below a certain load level, this may be used as the minimum safe, stable load. If such a recommendation is unavailable, you may use sound engineering judgment, based on a knowledge of the historical operation of the unit, to estimate the minimum safe, stable load. In making this determination, you may exclude low unit loads recorded during startup or shutdown while the unit is "ramping up" or "ramping down," unless these loads are able to be sustained and safely held for several hours at a time.

References: Appendix A, Section 6.5.2.1(b)

Key Words: Flow monitors

History: First published in March 2000, Update #12

Question 8.35

Topic: Load Analysis

Question: The historical load analysis described in Appendix A, Section 6.5.2.1(c) requires us to use the "past four representative operating quarters" in the analysis. Does this refer to complete calendar quarters only, or can we use a calendar year of data (365 days) that begins and ends in the middle of a quarter? If we perform the analysis in the fourth quarter of the year, can we simply use the data from the time we perform the analysis back to the beginning of that calendar year?

Answer: The historical load analysis must include the four most recent *complete* operating quarters that represent typical operation of the unit. If you perform the analysis in the middle of a quarter, you may include data from the current quarter; however, the historical look back must include load data from the previous four complete, representative operating quarters. In some cases, a facility may need to consider more than the past four quarters of data to identify four complete operating quarters that are representative of typical operation.

References: Appendix A, Section 6.5.2.1(c)

Key Words: RATAs, Recordkeeping

History: First published in March 2000, Update #12

Question 10.28

Topic: Dual Range Analyzers

Question: For a dual range analyzer defined as two separate components of a single monitoring system, which component ID do we report for an hour in which readings from both ranges are used to record data? How is the hourly average concentration determined?

Answer: For the case described (a dual range analyzer defined as two separate components of the same monitoring system), you may either implement Option 1 or Option 2 below, to calculate the average concentration and to determine which component ID (low scale or high scale) must be reported for an hour in which both ranges are used.

Option 1

(1) Establish the shortest or fundamental averaging period for which data are continuously recorded by the monitor (i.e., the time "x" required for one complete cycle of analyzing, reading, and data recording, where "x" may be 5 seconds, 10 seconds, or 60 seconds, depending on the type of data collection used in the DAHS/CEMS).

(2) If, during a particular hour, one or more fundamental readings are recorded on the high range, calculate the hourly average as follows:

(a) For all of the quality-assured fundamental readings recorded on the low scale during the hour, use the readings directly in the calculation of the hourly average;

(b) For the fundamental reading(s) recorded on the high range during the hour:

(i) If the high range is able to provide quality-assured data at the time of the reading (i.e., if the range is up-to-date with respect to its linearity check requirements and has passed a calibration error test within the last 26 clock hours), use the fundamental reading directly in the calculation of the hourly average; or

(ii) If the high range is not quality assured at the time of the reading, substitute the maximum potential concentration (MPC) for the reading and use the substitute value in the calculation of the hourly average (see Appendix A, Sections 2.1.1.5(b)(2) and 2.1.2.5(b)(2)).

(3) Report data for the hour using the high range component ID.

Option 2

(1) Establish the shortest or fundamental averaging period for which data are continuously recorded by the monitor as described in paragraph (1) under Option 1, above.

(2) Calculate the hourly average pollutant concentration as described in paragraphs (2)(a) and (2)(b) under Option 1, above.

(3) Except as noted in paragraph (5) below, if the calculated hourly average from step (2) is less than or equal to the full-scale setting of the low range, use the low range component ID to report data for the hour.

(4) Except as noted in paragraph (5) below, if the hourly average from step (2) is greater than the full-scale setting of the low range, use the high range component ID to report data for the hour.

(5) For some dual range CEM systems, an alarm or other mechanism causes the monitor to switch from the low range to the high range when emissions reach a pre-set level (e.g., for a low range of 200 ppm, the alarm may cause the high range to be activated when the emission level exceeds 175 ppm). For this type of system, use the low range component ID to report data for the hour if the hourly average from step (2) is less than or equal to the pre-set emission level at which the high range is activated. Use the high range component ID to report data for the hour if the calculated hourly average exceeds the pre-set emission level.

References: Appendix A, Sections 2.1.1.4, 2.1.1.5 , 2.1.2.4, 2.1.2.5

Key Words: Dual range, Reporting

History: First published in March 2000, Update #12

Question 10.29

Topic: Default High Range Value

Question: For units with dual span requirements, in lieu of operating and maintaining a high monitor range, Sections 2.1.1.4(f) and 2.1.2.4(e) of Appendix A to Part 75 allow the use of a default high range value of 200% of the MPC when the full-scale of the low range analyzer is exceeded. When the default high range option is selected, how is the hourly average SO_2 or NO_x concentration calculated? What happens when the full-scale of the low range analyzer is exceeded for only part of the hour?

Answer: To implement the default high range provision, you may use either of the following options:

Option 1

(1) Establish the shortest or fundamental averaging period for which data are continuously recorded by the monitor (i.e., the time "x" required for one complete cycle of analyzing, reading, and data recording, where "x" may be 5 seconds, 10 seconds, or 60 seconds, depending on the type of data collection used in the DAHS/CEMS).

(2) If *any* of the fundamental readings recorded during an hour exceeds the full-scale of the low range analyzer, report 200% of the MPC for that hour and report a method of determination code (MODC) of "19" to indicate the use of the default high range value.

Option 2

(1) Establish the shortest or fundamental averaging period for which data are continuously recorded by the monitor, as described in paragraph (1) of Option 1, above.

(2) Calculate the hourly average pollutant concentration as the arithmetic average of all quality-assured fundamental data values recorded during the hour, in the following manner:

(a) If a fundamental reading is less than the full-scale of the low range analyzer, use the reading directly in the calculation of the hourly average;

(b) If a fundamental reading indicates that the low range is "pegged" (i.e., the monitor output voltage indicates that the full-scale of the low range has been reached or exceeded), substitute 200% of the MPC for that reading and use the substituted value in the calculation of the hourly average.

(3) Report the hourly average calculated in the manner described in step (2) above as the unadjusted pollutant concentration and report an MODC of "19" to indicate that the default high range value was used for at least part of the hour.

References: § 75.57, Table 4A; Appendix A, Sections 2.1.1.4(f), 2.1.2.4(e); EDR v2.1 Reporting Instructions, Sections III.B.(1) and III.B.(2)

Key Words: Default high range, Dual range, Reporting

History: First published in March 2000, Update #12

Question 10.30

Topic: Calibration Error Test Following Non-routine Calibration Adjustments

Question: Section 2.1.3 of Appendix B to Part 75 requires an "additional" calibration error test to be performed whenever "non-routine" calibration adjustments are made to a monitor. Section 2.2.3 of Appendix B allows non-routine adjustments prior to quarterly linearity checks. Is it necessary to perform the additional calibration error test prior to the linearity test or can this calibration error test be performed immediately after the linearity check?

Answer: You may perform the additional calibration error test after the linearity check rather than prior to the check. However, you must follow the data validation rules in Sections 2.1.3(a) and (c) of Appendix B associated with this calibration error test. Sections 2.1.3(a) and (c) state that following non-routine adjustments, emission data from a monitor are considered to be invalid until an additional "hands-off"calibration error test has been completed and passed, which demonstrates that the monitor is operating within its performance specifications. Therefore, if you perform the additional calibration error test after a linearity check, you must invalidate any emission data collected in the time period beginning with the non-routine adjustment of the monitor and ending at the time of successful completion of the calibration error test. In order to validate the linearity test, the calibration error test must show the monitor to be operating within its performance specification band (± 2.5% of span). If the calibration error test shows that the monitor is not operating within its performance specification, the linearity test is invalidated and must be repeated. Report an "A" flag in column 69 of each of the RTs 601 in the invalidated linearity test. Do not report RT 602 for this test.

References: Appendix B, Sections 2.1.3 and 2.2.3

Key Words: Calibration error

History: First published in March 2000, Update #12

Question 10.31

Topic: Linearity Check Following Span Adjustment

Question: If a facility changes the span of a gas monitor, is a linearity check required?

Answer: It depends. Sections 2.1.1.5 and 2.1.2.5 of Appendix A to Part 75 require a diagnostic linearity check to be performed following a span adjustment of a gas monitor *only if* the span adjustment is so significant that the calibration gases currently used for daily calibration error tests and linearity checks are unsuitable for use with the new span value. For instance, suppose that the span of a NO_x monitor is 1000 ppm and the "low," "mid," and "high" calibration gases currently in use have concentrations of 250 ppm, 525 ppm, and 825 ppm, respectively. If, following a required annual span and range evaluation, the span is changed to 900 ppm, these calibration gas concentrations, expressed as percentages of the new span value, would be, respectively, 27.8%, 58.3%, and 91.6%. Since the calibration gases are still within the tolerance bands for low, mid, and high-level concentrations (i.e., 20.0-30.0% of span for low-level, 50.0-60.0% of span for mid-level, and 80.0-100.0% of span for high level), a diagnostic linearity check would not be required in this case. However, if the span had been lowered to 800 ppm or less, the current calibration gases would no longer be within the tolerance bands and a diagnostic linearity check would be required.

In cases where a span adjustment is required and the current calibration gases are unsuitable for use with the new span value, the owner or operator has up to 90 days after the end of the quarter in which the need to adjust the span is identified to implement the change (see Sections 2.1.1.5 and 2.1.2.5 of Appendix A). This allows time to purchase and receive the new calibration gases.

References: Appendix A, Section 2.1.1.5 and 2.1.2.5

Key Words: Linearity, Span

History: First published in March 2000, Update #12

Question 10.32

Topic: Diagnostic Linearity Check

Question: If, during a "QA operating quarter," a successful diagnostic linearity check is performed following a change to the span of a gas monitor, may this diagnostic linearity check be used to meet the quarterly linearity check requirement of Section 2.2.1 of Appendix B to Part 75?

Answer: Yes. This is consistent with Section 2.4 of Appendix B, which allows quality assurance tests to serve a dual purpose. In the example cited in Section 2.4, a single linearity check is used to meet a recertification requirement and to satisfy the routine quality assurance requirements of Appendix B.

In EDR v2.1, there is a new field in column 75 of RT 601 (Linearity Check Results), in which the "Reason for Test" is reported (e.g., "Q" = routine quality assurance, "D" = diagnostic, "R" = recertification, etc.). When a test is performed for a dual purpose, a two-letter code is used. In the present example, since the linearity check is done both for routine quality assurance and as a diagnostic test, the code "QD" would be reported in RT 601, column 75.

References: Appendix B, Sections 2.2.1 and 2.4; EDR v2.1, RT 601

Key Words: Linearity check, Reporting

History: First published in March 2000, Update #12

Question 10.33

Topic: Span and Range -- Annual Evaluation

Question: What must I do to comply with the provisions of Sections 2.1.1.5, 2.1.2.5, and 2.1.4.3 of Appendix A to Part 75, which require an annual evaluation of the span and range of my continuous emission monitors? Are there any other times at which span and range evaluations would be required?

Answer: To comply with the annual span and range evaluation provisions of Part 75, you must examine your historical CEMS data at least once per year to see if the current span and range values meet the guideline in Section 2.1 in Appendix A. According to that guideline, the full-scale range of a monitor must be selected so that data recorded during normal operation are kept, to the extent practicable, between 20.0 and 80.0% of full-scale. Section 2.1 also describes several allowable exceptions to the "20-to-80 percent of range" criterion.

The annual span and range evaluation may be done in any quarter of the year. At a minimum, the evaluation consists of examining all measured CEMS data (not substitute data) from the previous four calendar quarters, for each pollutant or parameter (i.e., SO_2 concentration, NO_x concentration, CO_2 concentration, and flow rate). You may also include data recorded in the quarter of the evaluation. For example, if the data analysis is performed in the fourth quarter of the year, the analysis must include all data from the 4th quarter of previous year through the 3rd quarter of the current year, and may (at the discretion of the owner or operator) include additional data from the 4th quarter of the current year.

Determine the percentage of the data that fall between 20.0 and 80.0% of full-scale and the percentage of the data that fall outside this range. The introductory text to Sections 2.1.1.5, 2.1.2.5, and 2.1.4.3 of Appendix A makes it clear that data recorded during short-term, non-representative operating conditions (such as a trial burn of a different fuel) should be excluded from the data analysis. If the majority (>50%) of the historical data are found to be within the 20.0 to 80.0% band, the current span and range values are acceptable and may continue to be used.

The results of annual span and range evaluations must be kept on-site, in a format suitable for inspection (see introductory text to Sections 2.1.1.5, 2.1.2.5, and 2.1.4.3 of Appendix A). Do not send these results to EPA.

If, for any pollutant or parameter, the results of the annual span and range evaluation fail to meet the guideline in Section 2.1 of Appendix A, Sections 2.1.1.5(a), 2.1.2.5(a), and 2.1.4.3(a) of Appendix A require that you adjust the span and range. When span and range adjustments are required, you have up to 45 days after the end of the quarter in which the need to adjust the span is identified (in this case, the quarter of the span and range evaluation) to implement the change, with one exception—for span and range changes to a gas monitor that require new calibration gases to be purchased because the current calibration gases are unsuitable for use with the new span value, you have up to 90 days after the end of the quarter of the unsatisfactory span and range evaluation to implement the span and range changes.

In addition to the annual evaluations, you may also have to conduct span and range evaluations whenever you plan to change the manner of operation of the affected unit(s), such that the emissions or flow rates may change significantly (see Sections 2.1.1.5(a), 2.1.2.5(a), and 2.1.4.3 of Appendix A). For example, installation of emission controls may require certain monitors to be re-spanned and re-ranged. You should plan any span and range changes needed to account for such changes in unit operation, so that they are made in as timely a manner as practicable to coordinate with the operational changes.

References: Appendix A, Sections 2.1.1.5(a), 2.1.2.5(a), and 2.1.4.3(a)

Key Words: Span

History: First published in March 2000, Update #12

Question 10.34

Topic: Preapproval for Use of Mid-level Calibration Gas

Question: If we use the new provision allowing the use of mid-level calibration gas, do we have to get preapproval?

Answer: No, preapproval is not required.

References: Appendix A, Section 6.3.1

Key Words: Calibration gases

History: First published in March 2000, Update #12

Question 10.35

Topic: Justification for Non-routine Calibration Adjustment

Question: What is an acceptable technical justification for a non-routine calibration adjustment? The rule states that such adjustments may be made prior to a RATA or linearity. May they also be made after any daily calibration?

Answer: Non-routine adjustments are allowed prior to RATAs and linearities because calibration gases are only guaranteed accurate to within 2% of the tag value. For daily calibrations, users of dilution-extractive systems that are very sensitive to ambient conditions, the revised rule allows an adjustment away from the tag value (but still within the performance specification band), when it is justified on technical grounds, such as an anticipated barometric pressure change, and is part of the QA plan for the CEMS. An additional calibration error test must be performed after non-routine adjustments to demonstrate that the analyzer is still operating within its performance specifications.

References: Appendix B, Section 2.1.3(c)

Key Words: Calibration error, Linearity, RATA

History: First published in March 2000, Update #12

Question 10.36

Topic: MPC for Units With Low NO_x Levels

Question: There will be many new units coming online in the Northeast with NO_X emissions controlled to very low levels. How can we determine MPC for those units? If we use the constants provided in Tables 2-1 or 2-2 of Appendix A to Part 75, we will have to revise the MPC, span, and range values once historical data has been obtained.

Answer: If you believe that the values in Tables 2-1 and 2-2 are unrepresentative of the maximum potential NO_x concentration for your affected unit, you may petition EPA under § 75.66 for permission to use an alternative MPC value (e.g., a reliable estimate of the uncontrolled emissions provided by the turbine manufacturer).

References: § 75.66

Key Words: NO_x monitoring

History: First published in March 2000, Update #12

Question 10.37

Topic: Effects of BAF on Full-scale Exceedance Reporting

Question: When full-scale exceedances of a high-scale monitoring range occur, Part 75 requires a value of 200% of the range to be reported. If the full-scale range is exceeded for only part of the hour, Policy Question 10.27 allows the hourly average to be calculated using a combination of real monitored data and the default value of 200% of the range. What happens if an hourly average SO_2 concentration calculated in this manner is multiplied by the bias adjustment factor (BAF), and gives a result greater than 200% of the range (e.g., if data are off -scale for 59 minutes of the hour and on-scale for one minute)? Will the Emission Tracking System (ETS) give an error message?

Answer: If the calculated hourly average SO_2 concentration times the BAF gives a result less than or equal to 200% of the range, report this result as the bias-adjusted SO_2 concentration. If the calculated SO_2 concentration times the BAF gives a result higher than 200% of the range, report 200% of the range as the bias-adjusted concentration. This will ensure that no error message is generated by ETS.

Note that when a "default high range" SO_2 value of 200% of the MPC is used for exceedances of a low-scale monitor range (as allowed under Section 2.1.1.4 (f) of Appendix A to Part 75), similar considerations apply. If the calculated hourly average SO_2 concentration times the BAF gives a result less than or equal to 200% of the MPC, report this result as the bias-adjusted SO_2 concentration. If the calculated SO_2 concentration times the BAF gives a result higher than 200% of the MPC, report 200% of the MPC as the bias-adjusted concentration (see Policy Question 10.29).

References: Appendix A, Sections 2.1.1.4(f), 2.1.1.5(b)

Key Words: Bias adjustment factor, Range

History: First published in March 2000, Update #12

Question 11.6

Topic: QA Plan Format

Question: Does our QA Plan need to have a standard format? We refer to other documents, such as manuals provided by vendors, but the information in these documents is not included in the QA Plan. Do we need to retype/reword the information in the manual and include it in the QA Plan?

Answer: No standard format is required and it is not necessary to retype the information from the other manuals. The QA Plan should reference the other documents and these documents should be available on site.

References: Appendix B, Section 1

Key Words: Quality assurance

History: First published in March 2000, Update #12

Question 13.4 REVISED

Topic: Monitoring Plan Requirements for Component/System Replacements

Question: If I replace the analyzer for an SO_2 or NO_x system, what are the requirements for assigning new component IDs or system IDs?

Answer: The requirements in this situation depend on whether the utility reports any data for the new replacement component/system which overlaps with data reported from the previously certified component/system.

(1) Requirements for Analyzer Replacement with Overlapping Use

If a utility replaces an analyzer (whether or not the analyzer is the same brand or model as the previously installed analyzer) and the second analyzer reports test data or emissions data for any hour during the same calendar quarter in which the first analyzer is also used to report test or emissions data, the utility must assign a new component ID and a new monitoring system ID to the second analyzer and set of associated components.

For example, suppose that a utility intends to replace component S01 in monitoring system 101 with a new analyzer of the same model. Suppose further that testing of the new analyzer begins in the 2nd quarter and that the utility continues to use and report quality-assured data from the previously certified system while testing the replacement analyzer. If the new analyzer is certified and begins to be used in the middle of the 2nd quarter, two separate, active monitoring systems (i.e., the old system and the new one) must be defined in the monitoring plan, because some of the quarterly data was recorded by the old system and some of it was recorded by the new one. The replacement analyzer must also be assigned a new component ID. Then, in the next quarter, show the old system as deleted in RT 510 of the quarterly report.

Example of Overlapping Data

```
                              Reporting
Certified System 101/     |--------------------|
Component S01            Jan 1            March 1
                                 Testing        Reporting
Replacement System 102/     |---------------|--------------------|
Component S02                             March 1             March 31
```

(2) Analyzer Replacement Without Overlapping Use

If a utility must replace component S01 in monitoring system 202 with a new analyzer and ceases to report data from the previously certified system at the end of a calendar quarter, and begins reporting data with the new, certified analyzer in the following quarter, the utility may use one of two approaches:

(a) Define new, unique, monitoring component/system IDs in the monitoring plan. In the first quarter that the new system is used, assign a status code of "D" (delete) to the old monitoring system and assign a status code of "A" (add) to the new system in RT 510 of the quarterly report; or

(b) Retain the existing monitoring system and component ID for the replaced analyzer. In this case, assign a status code of "C" to the replacement analyzer component in RT 510, to indicate that this component was changed out.

If there is a gap between the last date on which the previously-certified system is used and the date on which the new system begins to report valid data (Note: this includes conditionally valid data under § 75.20(b)(3)), either use an approved backup monitor or apply the appropriate missing data routines until the new monitoring system is able to provide quality-assured data.

Example of Non-overlapping Data

```
                                              Reporting            Missing Data
Certified System 202/               |--------------------------|-----------------|
Component S01                      Jan 1                      April 1

                                                                  Testing            Reporting
Replacement System 102/Component 30S or                    |-----------------|----------------------|
Recertified System 202/Component S01                      April 1                                  June 30
```

You may reuse a system or component ID for a replacement system for the same parameter (i.e., SO_2 to SO_2) in a non-overlapping case as stated above. However, you may not reuse a system or component ID for a replacement component/system associated with a different parameter (i.e., SO_2 to NO_x), at the same unit or stack.

References: § 75.53, § 75.61

Key Words: Monitoring plan, Recertification

History: First published in March 1995, Update #5; revised in October 1999 Revised Manual; revised in March 2000, Update #12

Question 13.5 REVISED

Topic: Monitoring Plan Requirements for DAHS Changes

Question: What are the requirements for assigning new system and component IDs for DAHS version upgrades and DAHS vendor or platform changes?

Answer: It is not necessary to change any monitoring system or component IDs for DAHS version upgrades or for DAHS vendor or platform changes.

In the electronic report for the quarter in which the software version is upgraded or the new DAHS is first used for reporting, provide the updated manufacturer and version information for the DAHS component in RT 510 and use a status code of "C" in column 16 to indicate that the DAHS component was changed. Also provide RT 555 (if reporting in EDR v1.3 or v2.0) or RT 556 (if reporting in EDR v2.1), describing the changes to the DAHS and indicating the date on which the required diagnostic testing of the new DAHS component was completed.

References: § 75.20, § 75.61

Key Words: DAHS, Diagnostic testing, Monitoring plan

History: First published in March 1995, Update #5; revised in March 2000, Update #12

Question 13.6 REVISED

Topic: Reporting and Testing for Recertification and Maintenance Events

Question: What events require recertification and what must a utility do when recertifying a system?

Answer: Different events require different levels of testing -- not all changes to a monitoring system require recertification. The May 26, 1999 revisions to Part 75 have clarified this (see §§ 75.20(b) and (g)(6). For instance, for change outs of analyzers EPA requires successful completion of all hardware recertification tests before the component/system reports quality-assured data. For DAHS changes, however, only *diagnostic* testing consisting of a DAHS verification and daily calibration of all systems associated with the DAHS is required. EPA is working to develop a more comprehensive policy on the type(s) of tests required for particular recertification and maintenance events, but in the interim, EPA will provide guidance on a case-by-case basis. If recertification is required, the designated representative must notify EPA and the appropriate State agency in writing of the dates of recertification testing in accordance with § 75.61, and must submit a recertification application in accordance with § 75.63.

The following table summarizes EPA policy on the types of tests required, the need to assign new component/system IDs and the requirement to submit RT 555 (for EDR v1.3 or v2.0) or RT 556 (for EDR v2.1), for recertification and maintenance events, as described in Policy Questions 13.4, 13.5, and 13.6.

Requirements Associated with Recertification and Maintenance Events

<table>
<tr><th colspan="2">TYPE OF CHANGE TO MONITORING SYSTEM</th><th>COMPONENT AND SYSTEM ID CHANGE REQUIRED?</th><th>RT 555 (v1.3) or RT 556 (v2.1) REQUIRED</th><th>RECERTIFICATION OR DIAGNOSTIC TESTS REQUIRED</th></tr>
<tr><td rowspan="2">Analyzer Change</td><td>Data Overlap</td><td>Yes</td><td>Yes</td><td rowspan="2">RATA/Bias Test
Linearity *
Cycle Response Time *
7-Day Cal Error
DAHS Verification**</td></tr>
<tr><td>No Data Overlap</td><td>No</td><td>Yes</td></tr>
<tr><td colspan="2">DAHS Version Upgrade, <u>or</u> DAHS Vendor or Platform Change</td><td>No</td><td>Yes</td><td>Daily Calibration
DAHS Verification</td></tr>
<tr><td colspan="2">Other Modifications</td><td>No</td><td>Yes</td><td>Consult with EPA</td></tr>
</table>

* Not required for flow.

** DAHS verification may consist of either new verification tests or a Certification Statement that the previous DAHS verification applies.

References: § 75.61, § 75.20

Key Words: DAHS, Monitoring plan, Recertification

History: First published in March 1995, Update #5; revised in October 1999 Revised Manual; revised in March 2000, Update #12

Question 14.90

Topic: Submissions of EDR v2.1

Question: When will ETS be able to accept submissions in EDR v2.1?

Answer: ETS will accept EDR v2.1 submissions beginning with submissions for the first quarter 2000; so submissions after April 1, 2000 may be in EDR v2.1. EDR v1.3 formats are also acceptable for the first quarter in 2000.

References: N/A

Key Words: Electronic report formats

History: First published in March 2000, Update #12

Question 14.91

Topic: Monitoring Plan -- Hardcopy

Question: If we submit monitoring plans electronically to States and Regions, must we still keep a hardcopy on site?

Answer: A complete monitoring plan should be available on site for inspection purposes. As long as the plan can be printed out during an inspection, it may be stored electronically (see § 75.53(e)). The Monitoring Data Checking (MDC) software, which is available from the Acid Rain Program web site, may be used to print out the monitoring plan. If schematics or other parts of the plan are not available electronically, they should be kept on site in hardcopy.

References: § 75.53(e)

Key Words: Monitoring plan

History: First published in March 2000, Update #12

Question 14.92

Topic: Reporting Use of Like Kind Replacement Monitors

Question: For the use of like kind replacement (LK) monitors -- may I list the LK monitor in RT 510 every quarter instead of just the quarters I use it?

Answer: Yes.

References: EDR v2.1, RT 510

Key Words: Electronic report formats

History: First published in March 2000, Update #12

Question 14.93

Topic: DAHS Upgrade and EDR v2.1

Question: Must our DAHS upgrade be complete on April 1, 2000 or may we change over during the second quarter?

Answer: Beginning on April 1, 2000, you must be able to collect all of the required information specified in EDR v2.1. You must also be able to generate a quarterly report in EDR v2.1 format no later than July 30, 2000. All of the data in each electronic quarterly report must be in the same EDR version. Consequently, EDR version upgrades in the middle of a calendar quarter are prohibited.

References: EDR v2.1

Key Words: Electronic report formats

History: First published in March 2000, Update #12

Question 14.94

Topic: EDR v2.1 Upgrade

Question: Assume I upgraded from EDR v1.3 to EDR v2.1 on February 1, 2000. When do I start reporting data availability -- January 1, 2000 or February 1, 2000?

Answer: You may <u>not</u> upgrade to EDR v2.1 in the middle of a calendar quarter. All of the data in each electronic quarterly report must be in the same EDR version. If you are unable to record all of the applicable data required under §§ 75.57 through 75.59 as of January 1, 2000, you must wait until the second quarter of 2000 to begin reporting in v2.1. See Question 14.99 for information on data availability for moisture. For other parameters, the data availability would not be affected by the upgrade from EDR v1.3 to EDR v2.1.

References: EDR v2.1

Key Words: Electronic report formats

History: First published in March 2000, Update #12

Question 14.95

Topic: Use of EDR v2.1 Fuel Sampling Codes in EDR v1.3 Submission

Question: In the time between now and the EDR v2.1 upgrade, can I use EDR v2.1 fuel sampling codes in my EDR v1.3 submissions?

Answer: No, you should use the code in EDR v1.3 that is most representative of the action. Unless it is specifically allowed by EPA guidance, do not submit any EDR v2.1 codes in an EDR v1.3 submission.

References: EDR v1.3; EDR v2.1

Key Words: Electronic report formats

History: First published in March 2000, Update #12

Question 14.96

Topic: DAHS Verification Following EDR Upgrade

Question: What are the DAHS verification requirements for upgrading from EDR v1.3 to v2.1?

Answer: Both formula verification and missing data routine verification are required. The minimum requirements are as follows:

(1) Emission and heat input rate formulas must be verified at each unit or stack location. The results of these checks must be kept on-site in a format suitable for inspection.

(2) Missing data routines may be verified either:

(i) By performing tests (e.g., a v2.1 equivalent of DCAS) at each location where the software is installed. If the developer of the software is able to perform this testing for customers via network, rather than by visiting each individual site, this is acceptable; or

(ii) By installing a standard software package which has been thoroughly tested by the developer for conformance with the Part 75 missing data algorithms.

If Option (ii) above is chosen, the following additional requirements apply:

(A) The missing data software must be installed at each location using the same type of operating system on which the software was tested by the developer;

(B) The developer must provide an official statement to each user (e.g., a certificate or a letter from the appropriate corporate official) certifying that the missing data software meets the requirements of Part 75; and

(C) Each user of the software must add a provision to the QA plan for the monitoring systems (if such a provision is not already in place) to examine the values substituted by the DAHS during missing data periods for "reasonableness" (e.g., do the substituted values appear to be correct in view of the percent monitor data availability (PMA) and the length of the missing data period; do the substitute NO_x and flow rate values change when the load range changes during a missing data period; are maximum potential values substituted when the PMA drops below 80.0%; etc.). The QA plan must include a corrective action provision to resolve any problems encountered with the missing data routines expeditiously. If correction of erroneous substitute data is found to have a "significant" impact on the reported quarterly emissions or heat input (as defined in the "Quarterly Report Review Process for Determining Final Annual Data;" see Appendix C of this Policy Manual), resubmittal of the affected quarterly report(s) is required.

For both Options (i) and (ii), you must keep documentation of the tests performed to verify the missing data routines and the test results on-site in a format suitable for inspection.

(3) In the electronic quarterly report for the quarter in which you upgrade to EDR v2.1, you must include the following certification statements (as applicable) in RT 910 of the quarterly report file:

I certify that the automated Data Acquisition and Handling System (DAHS) component of each CEM system was tested and that proper computation of hourly averages for SO_2, NO_x, CO_2, and heat input rate for each formula submitted in the monitoring plan, according to the requirements of 40 CFR Part 75, was verified.

I certify that the automated Data Acquisition and Handling System (DAHS) component of each CEM system was tested and that proper computation of the missing data substitution procedures was verified according to 40 CFR Part 75.

I certify that the automated data acquisition and handling system (DAHS) component of each Appendix D system was tested, and that the DAHS correctly identifies any data that is generated using the missing data routines. In addition, I believe that the DAHS performs missing data substitution procedures set forth in Appendix D of Part 75 and clarified by EPA guidance.

I certify that the automated data acquisition and handling system (DAHS) component of the Appendix E system was tested, and that the DAHS correctly identifies any data that is generated using the missing data routines. In addition, I believe that the DAHS performs missing data substitution procedures set forth in Appendix E of Part 75 and clarified by EPA guidance.

References: EDR v2.1

Key Words: DAHS

History: First published in March 2000, Update #12

Question 14.97

Topic: Monitoring Data Checking (MDC) Software Availability

Question: Is MDC 3.0 going to be available free of charge? Whom should we contact with problems?

Answer: MDC 3.0 will be free. You should contact either Kim Nguyen at CAMD (nguyen.kim@epa.gov or (202) 564-9102) or Perrin Quarles Associates, the technical support contractor (mdc@pqa.com or (804) 979-3700).

References: N/A

Key Words: Electronic report formats, Monitoring plan, Reporting

History: First published in March 2000, Update #12

Question 14.98

Topic: ETS Checks for EDR v2.1

Question: How can we see a list of all of the ETS checks and error messages for EDR v2.1 so that we can test our data before submission?

Answer: EPA is in the process of testing the software that contains all the ETS checks that will be performed on quarterly reports submitted using EDR 2.1. Final decisions about what checks will go into ETS production have not been made. You can submit your quarterly report during the first or second quarter, 2000 submission period to see what effect the new software has on your file and you have the opportunity to resubmit until the submission deadline. EPA also has updated the "Quarterly Report Review Process for Determining Final Annual Data." This document contains all ETS checks that will result in a critical error (Status 5) or rejection (Status 6). It is available on the Web and is also included in Appendix C of the Policy Manual.

References: EDR v2.1

Key Words: Electronic report formats, Reporting

History: First published in March 2000, Update #12

Question 14.99

Topic: Moisture Reporting -- EDR Upgrade

Question: For a moisture monitoring system consisting of wet and dry oxygen monitors, if I complete the required initial certification tests of the system in the first quarter of 2000, and also upgrade to EDR v2.1 in that quarter, how do I report hourly moisture data for the first quarter of 2000? When do I start doing percent monitor data availability calculations for moisture?

Answer: If you upgrade to EDR v2.1 in the first quarter of 2000, you must report all data for the quarter in v2.1 format. Therefore, you must report all hourly percent moisture data in EDR RT 212, in accordance with the "Revised EDR Version 2.1 Reporting Instructions", and you must discontinue reporting percent moisture in RT 220.

If you complete the certification tests of the moisture monitoring system in the first quarter of 2000 (i.e., prior to the certification deadline of April 1, 2000), you have the following options for recording and reporting the hourly percent moisture data in RT 212 for the first quarter of 2000:

(1) You may record and report all of the percent moisture data for the entire quarter using the same methodology that has been used historically. If this option is selected, you would not begin reporting quality-assured data from the certified moisture monitoring system until the beginning of the second quarter of 2000; or

(2) You may record and report the hourly percent moisture data by the historically-used method from hour 00 on January 1, 2000 to the date and hour of provisional certification of the moisture monitoring system (see § 75.20(a)(3)), and then report quality-assured moisture data from the monitoring system beginning with the hour of provisional certification.

Whichever option is chosen, for all hours in which non-quality-assured moisture data is reported in RT 212, fill in only the Record Type code, Unit/Stack ID, Date, Hour, Average moisture content of flue gases for the hour, and a Method of Determination Code (MODC) of "55"(manual entry of the MODC is permitted). Leave all other fields in RT 212 blank. If Option 2 is chosen, a complete RT 212 must be reported for all hours after the provisional certification of the moisture monitor.

Once you begin reporting quality-assured data from the moisture monitoring system as described in option (1) or (2), above, you must use the initial missing data procedures in § 75.31(b) for the first 720 quality-assured monitor operating hours. After 720 quality-assured monitor operating hours have been recorded, you must switch to the standard missing data procedures in § 75.33(b) (making note of the exceptions and special cases described in § 75.37, which pertain only to moisture missing data) and begin calculating percent monitor data availability according to § 75.32.

References: § 75.20(a)(3), § 75.30(b), § 75.32, § 75.33(b), § 75.37; EDR v2.1, RT 212

Key Words: Electronic report formats, Missing data

History: First published in March 2000, Update #12

Question 14.100

Topic: Submission of RATA Records

Question: Do we submit the most recent RATA summary records (RTs 611) in every quarterly report or only in the quarter in which we performed the RATA?

Answer: Include complete RATA data (RTs 610 and 611) only for the quarter in which a RATA is performed. Do not include the RTs 611 in subsequent quarterly reports. This guidance pertains to both Acid Rain and OTC-NO_x Budget Program units. This policy supersedes the guidance given in the "NO_x Budget Program Monitoring Certification and Reporting Instructions," dated July 3, 1997.

References: EDR v2.1, RTs 610 and 611

Key Words: RATA, Reporting

History: First published in March 2000, Update #12

Question 14.101

Topic: Minimum Default Unit Load

Question: During certain operating conditions (e.g., startup), a unit may not have any measurable load in megawatts or klb/hr of steam. This creates a problem in the reporting of unit heat input rates for common stacks and common pipe configurations, because the heat input rate measured at the common stack (or pipe) is apportioned to the individual units on the basis of unit load. If the unit load is zero, the heat input rate apportionment equation (Equation F-21a or F-21b) will assign an hourly heat input rate of zero to the unit, irrespective of whether the unit is combusting fuel. Reporting a positive unit operating time in RT 300/18 (indicating that the unit is combusting fuel) and a zero unit heat input rate in RT 300:36 generates an error message in the feedback report for my EDR submission. How can I avoid generating this error message and ensure that a positive unit heat input rate is reported for all hours in which a positive unit operating time is reported?

Answer: You may define a minimum default unit load, which you would use during hours of zero unit load.

A default unit load of 1.0 MWe (or 1.0 klb/hr of steam, as applicable) is recommended. However if, for a particular hour, use of a 1.0 MWe (or 1.0 klb/hr of steam) default unit load value in Equation F-21a (or F-21b) still results (after rounding off) in a zero unit heat input rate, then for that hour, use the smallest whole number value of unit load that gives a reportable unit heat input rate greater than zero.

Include in the QA plan for the facility the exact procedure used to determine unit heat input rate during unit operating hours where the unit load is zero. Manual substitution of the default unit load value and manual correction of the reported unit heat input rate is permissible for such hours.

References: EDR v2.1, RT 300

Key Words: Heat input, Reporting

History: First published in March 2000, Update #12

Question 14.102

Topic: Reporting RATA Results and Applying a BAF to a Dual Range Analyzer

Question: I have a unit with add-on NO_x controls. The unit has a dual range NO_x analyzer, which is identified as two separate, primary systems. According to Section 6.5 in Appendix A to Part 75, I only need to perform a RATA on the normal (low) range system. Will ETS give error messages if I do not report RATA results for the high range system? Also, for reporting purposes, what bias adjustment factor (BAF) do I apply to data from the high range system? The BAF of the low range system?

Answer: To ensure that no error messages are obtained, report the results of every low range RATA *twice*, once under the low range system ID and once under the high range system ID. Use the low range system BAF to adjust the emissions data recorded by both systems.

References: Appendix A, Section 6.5

Keywords: Bias adjustment factor, RATA, Reporting

History: First published in March 2000, Update #12

Question 15.28

Topic: Diluent Monitor Data Availability

Question: For CO_2 and heat input missing data, when do I start reporting diluent monitor data availability on an hourly basis -- with the hour I do the EDR v2.1 upgrade?

Answer: This is covered in §§ 75.35 and 75.36. In the case where an existing, certified diluent monitor is in place, when you implement the new missing data algorithms for CO_2 or O_2 (as applicable) you must perform the initial missing data procedures of § 75.31(b) for the first 720 quality assured monitor operating hours, and then switch to the standard missing data procedures in § 75.35(d) or § 75.36(d), as applicable. Monitor data availability calculation and reporting begins when you begin using the standard missing data procedures.

The new CO_2 and heat input missing data algorithms may be implemented beginning on January 1, 2000 and <u>must</u> be implemented no later than April 1, 2000. The first operating hour of the quarter in which you first report data in EDR v2.1 is the proper point at which to start using the initial missing data procedures of § 75.31(b). Note that you may upgrade to EDR v2.1 <u>only</u> at the beginning of a calendar quarter, not in the middle of a quarter.

References: § 75.35, § 75.36

Key Words: Diluent monitors, Missing data

History: First published in March 2000, Update #12

Question 15.29

Topic: Missing Data Procedures After EDR Upgrade

Question: When I upgrade to EDR v2.1, should I reset the missing data clock and the percent monitor data availability (PMA) and begin using the initial missing data procedures in § 75.31?

Answer: It depends on the parameter. Use the initial missing data procedures of § 75.31 only for parameters such as CO_2 and moisture, for which hourly reporting of PMA was not required in the past, but now is required under the May 26, 1999 revisions to Part 75. However, for SO_2, NO_x, and flow rate, maintain the connection with the historical data streams when you switch to EDR v2.1 (i.e., do not reset the missing data lookback period or the PMA).

References: § 75.31

Key Words: Missing data

History: First published in March 2000, Update #12

Question 15.30

Topic: Valid Hours

Question: Suppose that in the first two 15-minute quadrants of an hour (Hour # 1), I collect sufficient valid CEMS data to meet the requirement of § 75.10(d)(1) and then I perform preventative maintenance on the CEMS for the remainder of that hour, extending into the next clock hour (Hour # 2). If the monitor passes a post-maintenance calibration error test in Hour # 2 and collects sufficient valid data in the last two 15 minute quadrants of Hour # 2 to satisfy § 75.10(d)(1), are both Hours # 1 and 2 valid, or is only Hour # 2 valid ?

Answer: The emission data for both Hours # 1 and # 2 may be reported as quality-assured. The principal data capture requirement for Part 75 sources in § 75.10(d)(1) states that in order to validate data for an hour, you must obtain at least one valid data point in each quadrant of the hour in which fuel is combusted. However, § 75.10(d)(1) provides an exception to this requirement for hours in which quality assurance testing and preventive maintenance activities are performed. For such hours, a minimum of two data points, separated by at least 15 minutes, are required to validate the hour.

In the present case, the emission data collected in Hour # 1 are considered valid, because the data were recorded prior to the maintenance event (i.e., prior to commencement of the out-of-control period). The data in Hour # 2 are valid because they were collected after a successful post-maintenance calibration error test (i.e., after the end of the out-of-control period).

References: § 75.10(d)(1)

Key Words: Data validity

History: First published in March 2000, Update #12

SECTION 22: SUBTRACTIVE STACK CONFIGURATIONS

Background

For the Acid Rain Program (40 CFR Parts 72 through 78), SO_2 and heat input (HI) monitoring requirements for exhaust configurations in which units discharge to the atmosphere through a common stack are defined in § 75.16. For a State or Federal NO_x mass emissions reduction program subject to Subpart H of 40 CFR 75, provisions for monitoring various common stack configurations are found in § 75.72. For units subject to the OTC NO_x Budget Program, the document entitled, "Guidance for Implementation of Emission Monitoring Requirements for the NO_x Budget Program" (January 28, 1997), contains provisions for determining NO_x mass emissions in common stack configurations. In the specific case where affected and nonaffected units share a common stack, the allowable monitoring options under all of these programs are similar. To determine emissions for the affected units, you may:

(1) Monitor in the duct(s) leading from the affected unit(s) to the common stack; or

(2) Monitor at the common stack and opt-in the nonaffected units; or

(3) Monitor at the common stack and attribute all of the emissions to the affected units; or

(4) Petition EPA to use an alternative approach; or

(5) Monitor the combined emissions from the affected and nonaffected units at the common stack and monitor the emissions of each nonaffected unit in the duct from the nonaffected unit to the common stack, and then determine the affected unit emissions by subtraction. Questions 22.1 through 22.12 provide monitoring and reporting guidelines for this subtractive stack configuration.

(Note: Common stack NO_x *emission rate* monitoring and reporting is not addressed in this section. For information about NO_x emission rate monitoring for affected units and nonaffected units sharing a common stack, consult Section 24 of this Policy Manual.)

Definitions

Affected Unit: A unit subject to an SO_2 or NO_x mass emissions limitation under the Acid Rain Program or under a State or Federal NO_x mass trading program.

Main Common Stack: The stack through which the emissions from all units (affected and nonaffected) in a subtractive stack configuration discharge to the atmosphere.

Nonaffected Unit: A unit not subject to an SO_2 or NO_x mass emissions limitation under the Acid Rain Program or under a State or Federal NO_x mass trading program.

Secondary Common Stack: A location in the ductwork of a subtractive stack configuration, upstream of the main common stack, where the combined emissions from two or more nonaffected units are monitored.

Subtractive Stack Configuration: An exhaust configuration in which combined emissions from affected and nonaffected units discharge to the atmosphere through a common stack, and for which the mass emissions and heat input from the affected unit(s) are determined by subtracting the mass emissions and heat input measured at the nonaffected unit(s) from the combined mass emissions and heat input measured at the common stack.

Question 22.1

Topic: Purpose of Subtractive Stack Policy

Question: What is the purpose of this policy?

Answer: If you have an exhaust configuration consisting of affected and nonaffected units that discharge to the atmosphere through a common stack and you elect to use the subtractive stack methodology (i.e., option 5 under Background section, above), this policy provides guidance on emissions monitoring and reporting.

You may use this guidance under § 75.16(b)(2)(ii)(A) without approval of a petition for SO_2 mass emissions determinations under the Acid Rain Program. However, for NO_x mass emissions applications under the OTC NO_x Budget Program you must petition the permitting authority and under Subpart H of 40 CFR Part 75, you must petition the Administrator and the permitting authority for permission to use a subtractive stack methodology (see § 75.72(b)(2)(ii)). If your petition is consistent with the provisions of this policy, you have reasonable assurance that the petition will be approved and your monitoring will be consistent with other facilities using a subtractive stack methodology.

References: § 75.16, § 75.72(b)(2)(ii)

Key Words: NO_x monitoring

History: First published in March 2000, Update #12

Question 22.2

Topic: Monitoring Requirements for SO_2 and Heat Input Rate

Question: What are the SO_2 mass emission rate and heat input rate monitoring requirements for Acid Rain Program affected units that are in a subtractive stack configuration?

Answer: Sections 75.16(b)(2)(ii)(B) and 75.16(e) of Part 75 specify the SO_2 mass emission rate and heat input rate monitoring requirements for the common stack and for the nonaffected units in a subtractive stack configuration. These rule provisions are summarized in Sections A, B, and C, below. The hourly SO_2 mass emission rates and heat input rates described in sections A, B and C are calculated using the applicable equations from Appendix F or Appendix D to Part 75:

A. Main Common Stack Hourly SO_2 and Heat Input Rate Monitoring Requirements

The owner or operator of an Acid Rain-affected facility with a subtractive stack configuration must monitor hourly SO_2 mass emission rate and heat input rate at the common stack using the following methodologies:

(1) For SO_2 mass emission rate: an SO_2 CEM and a flow monitor; and

(2) For heat input rate: a stack flow monitor and a diluent gas (CO_2 or O_2) monitor.

B. Nonaffected Unit(s) Hourly SO_2 Monitoring Requirements

The owner or operator must determine the hourly SO_2 mass emission rate (in lb/hr) at the nonaffected unit(s) using one of the methodologies below:

(1) Install an SO_2 CEM and a flow monitor in the duct from each nonaffected unit to the common stack; or

(2) If the emissions from two or more nonaffected units in the subtractive stack configuration are combined prior to discharging through the main common stack, you may monitor the combined nonaffected unit SO_2 emissions at a single location, defined as a second common stack, in lieu of installing separate CEMS on each unit; or

(3) For nonaffected gas or oil-fired units, you may use Appendix D SO_2 mass emission rate estimation procedures based on fuel flow rate measurements and fuel sampling.

C. Nonaffected Unit(s) Hourly Heat Input Rate Monitoring Requirements

The owner or operator must determine the hourly heat input rate at each nonaffected unit using one of the following methodologies:

(1) You may install a flow monitor and a diluent gas monitor in the duct from each nonaffected unit to the common stack; or

(2) If the flue gases from two or more nonaffected units in the subtractive stack configuration are combined prior to discharging through the main common stack, you may monitor the combined heat input rate at a single location (designated as a secondary common stack) in lieu of separately monitoring each unit. If this alternative is chosen, you must apportion the heat input rate measured at the secondary common stack to the individual nonaffected units; or

(3) In lieu of directly monitoring the heat input rate(s) of the nonaffected unit(s), you may opt to monitor heat input rate at the main common stack, only. This option is only allowed if all of the units exhausting to the common stack:

(i) Combust the same type of fuel; and

(ii) Use the same F factor.

Note that when this option is selected, the heat input rate measured at the main common stack is a *combined* rate, representing both the affected and nonaffected units. Therefore, you must apportion the main common stack heat input rate to <u>all</u> of the units (affected and nonaffected) in the subtractive stack configuration; or

(4) For nonaffected gas and oil-fired units, you may use Appendix D heat input rate estimation procedures based on fuel flow rate measurements and fuel sampling.

(Note: For a common pipe configuration, you must apportion the heat input rate measured at the common pipe to the individual nonaffected units.)

See Question 22.4 for a more detailed discussion of heat input rate apportionment in subtractive stack configurations.

D. Affected Unit(s) Hourly SO_2 Monitoring Requirements

Use Equation SS-1a (see Table 22-1) to determine the total hourly SO_2 mass emissions (in lb) for the affected unit(s) by subtraction. In Equation SS-1a, use the measured SO_2 mass emission rates from Sections A and B, above, along with the unit and stack operating times. When the combined emissions from two or more nonaffected units are monitored at a single location, then, for those units, replace the term $SO2_{nonaff}\, t_{nonaff}$ in Equation SS-1a with the term $SO2_{CS*}$ t_{CS*} , where $SO2_{CS*}$ is the combined SO_2 emission rate for the nonaffected units and t_{CS*} is the stack operating time at the monitored location (which is designated as a secondary common stack).

If any of the nonaffected units are oil or gas-fired and receive fuel from a common pipe, then, for those units, replace the expression $SO2_{nonaff}\, t_{nonaff}$ in Equation SS-1a with the expression $SO2_{CP}\, t_f$, where $SO2_{CP}$ is the measured hourly SO_2 mass emission rate at the common pipe and t_f is the fuel usage time at the common pipe.

After determining the total hourly SO_2 mass emissions for the affected units, use Equation SS-1b (see Table 22-1) to apportion the total hourly SO_2 mass emissions to the individual affected units.

Ensure that Equations SS-1a and SS-1b (as applicable) are implemented on an hourly basis in the data acquisition and handling system (DAHS), so that the cumulative SO_2 mass emissions reported are correct. Keep records of all hourly SO_2 mass emissions values for the affected units and use these values to calculate the quarterly and cumulative SO_2 mass emissions (in tons) from the affected units. However, do <u>not</u> report any SO_2 mass emission rates (in lb/hr) or SO_2 mass emissions (in lb) in RTs 310 for the affected units.

Table 22-1: Hourly So_2 Mass Emissions Formulas for the Affected Unit(s)

Equation Code	Formula	Where
SS-1a	$SO2M_{aff-tot} = SO2_{CS}\,t_{CS} - \sum_{All-nonaff} SO2_{nonaff}\,t_{nonaff}$	$SO2M_{aff\text{-}tot}$ = Total hourly SO_2 mass emissions from the affected unit(s) (lb) $SO2_{CS}$ = Hourly SO_2 mass emission rate measured at the common stack (lb/hr) $SO2_{nonaff}$ = Hourly SO_2 mass emission rate measured at a particular nonaffected unit (lb/hr) t_{CS} = Operating time for the common stack (hr) t_{nonaff} = Operating time for a particular nonaffected unit (hr)
SS-1b	$SO2M_{aff-i} = SO2M_{aff-tot}\dfrac{L_{aff-i}t_{aff-i}}{\sum_{all-aff} L_{aff-i}t_{aff-i}}$	$SO2M_{aff\text{-}i}$ = Hourly SO_2 mass emissions from a particular affected unit (lb) $SO2M_{aff\text{-}tot}$ = Total hourly SO_2 mass emissions from the affected unit(s) (lb) $(L)_{aff\text{-}i}$ = Hourly unit load for a particular affected unit (MW <u>or</u> klb per hour of steam) $t_{aff\text{-}i}$ = Operating time for a particular affected unit (hr)

When using Equation SS-1a, if in a given hour the measured total SO_2 mass emissions (in lb) at the nonaffected units are greater than the mass emissions measured at the main common stack (<u>i.e.</u>, if the summation term to the right of the minus sign in Equation SS-1a is greater than the term to the left of the minus sign), this will result in negative mass emissions for that hour. For any hour in which this happens, substitute a value of zero for the total SO_2 mass emissions from the affected units when determining quarterly, or year-to-date SO_2 mass for the affected units.

E. Affected Unit(s) Hourly Heat Input Rate Determination

Determine the hourly heat input rate for each affected unit, using the applicable method described in Question 22.4.

F. Affected Unit(s) Hourly Load and Operating Time

As indicated in paragraphs A through D, above, emissions from the affected units in a subtractive stack configuration are not measured directly. However, the owner or operator must maintain hourly records of unit load and unit operating time for each affected unit, for the purposes of apportioning emissions and/ or heat input to the individual affected units. Report these hourly values in RT 300.

References: § 75.16(b)(2)(ii)(B), § 75.16(e)

Key Words: SO_2 monitoring, Heat input

History: First published in March 2000, Update #12

Question 22.3

Topic: Monitoring Requirements for NO_x Mass

Question: What are the NO_x mass emissions monitoring requirements for subtractive stack configurations under Subpart H of 40 CFR Part 75 or under the OTC NO_x Budget Program?

Answer: The monitoring requirements for the common stack and for the nonaffected units in the subtractive stack configuration are found in § 75.72(b)(2) and on pages 14 and 15 of the "Guidance for Implementation of Emission Monitoring Requirements for the NO_x Budget Program" (dated January 28, 1997). These provisions are summarized in Sections A and B, below. The hourly NO_x emission rates, NO_x mass emissions, and heat input rates described in Sections A and B are calculated using the applicable equations from Appendix F or Appendix D to Part 75:

A. Main Common Stack NO_x Monitoring Requirements

The owner or operator must determine NO_x mass emissions at the common stack using either a "NO_x emission rate and heat input rate" methodology or a "NO_x concentration and stack flow rate" methodology, as follows:

(1) You may install a NO_x-diluent CEMS for NO_x emission rate determination and a stack flow monitor and a diluent monitor for heat input rate determination; or

(2) You may install a NO_x concentration CEM and a stack flow monitor; or

(3) If the subtractive stack configuration consists exclusively of oil and gas-fired units exhausting to a common stack, you may install a NO_x-diluent CEM at the main common stack to determine the NO_x emission rate, use Appendix D fuel flowmeters to determine unit-level heat input rates, and then derive the heat input rate at the common stack from the unit-level heat input rates and operating times, using Equation F-25 in Appendix F of Part 75 (see heat input apportionment and summation formula Table under Question 22.4, below).

B. Nonaffected Unit(s) Hourly NO_x Monitoring Requirements

The owner or operator must determine hourly NO_x mass emissions at the nonaffected unit(s) using one of the following methodologies:

(1) Install a NO_x-diluent CEMS, a stack flow monitor, and a diluent monitor in the duct leading from each nonaffected unit to the common stack; or

(2) If the emissions from two or more nonaffected units in the subtractive stack configuration are combined prior to discharging through the main common stack, you may monitor the combined nonaffected unit NO_x emission rate and heat input rate at a single location in lieu of installing separate CEMS on each unit. Define the monitoring location as a secondary common stack serving the nonaffected units; or

(3) If the following conditions are met:

(i) All units (affected and nonaffected) exhausting to the main common stack combust the same type of fuel and use the same F factor; and

(ii) All units (affected and nonaffected) exhausting to the main common stack are of the same basic design with a similar combustion efficiency (±10%); and

(iii) There is no suitable location in the existing ductwork at which to install a flow monitor, then it is not necessary to monitor heat input rate at the nonaffected units (see § 75.72(g)). Therefore, when the conditions above are met, you may opt to install NO_x-diluent monitoring systems on the nonaffected units (or group(s) of units) and monitor heat input rate only at the main common stack.

Paragraph A in Question 22.4 explains how to determine the nonaffected unit heat input rates when heat input rate is monitored only at the main common stack; or

(4) You may install a NO_x concentration CEM and flow monitor in the duct from each nonaffected unit to the common stack; or

(5) If the emissions from two or more nonaffected units in the subtractive stack configuration are combined prior to discharging through the main common stack, you may monitor the combined nonaffected unit NO_x concentration and flow rate at a single location in lieu of installing separate CEMS on each unit. Define the monitoring location as a secondary common stack serving the nonaffected units; or

(6) For nonaffected oil or gas-fired units, you may install a NO_x-diluent CEMS in the duct from each nonaffected unit to the common stack, and use Appendix D fuel flowmeter(s) to determine the unit heat input rate(s).

(Note: If any of the nonaffected units receive fuel through a common pipe, you must apportion the heat input rate measured at the common pipe to the individual units (see Question 22.4)); or

(7) If the emissions from two or more nonaffected oil and gas-fired units in the subtractive stack configuration are combined prior to discharging through the main common stack, you may monitor the combined nonaffected unit NO_x emissions at a single location in lieu of installing separate NO_x-diluent CEMS on each unit. Define the monitoring location as a secondary common stack serving the nonaffected units. Determine the heat input rate at the secondary common stack by summing the unit-level heat inputs, using Equation F-25 in Appendix F of Part 75 (see heat input rate apportionment and summation formula Table in Question 22.4, below).

C. Affected Unit(s) Hourly NO_x Mass Emissions Determination

Determine the total hourly NO_x mass emissions (in lb) for the affected unit(s), by substituting the measured NO_x mass emissions from Sections A and B, above into Equation SS-2a (see Table 22-2). Then, use Equation SS-2b or SS-2c (as applicable) (see Table 22-2) to apportion the total hourly NO_x mass emissions to the individual affected units. Equation SS-2b applies when unit load is reported in megawatts. Equation SS-2c applies when unit load is reported in klb of steam per hour. Note that the summation terms in the denominators of these equations include only the heat input rates and load values for the *affected* units.

Ensure that Equations SS-2a, SS-2b, and SS-2c (as applicable) are implemented on an hourly basis in the data acquisition and handling system (DAHS), so that the NO_x mass emissions reported are correct. Keep records of all hourly NO_x mass emissions values for the affected units, as determined from these equations, and use the hourly values to calculate the quarterly and cumulative NO_x mass emissions (in tons) for these units. However, do not report any hourly NO_x mass emissions values in RT 328 for the affected units.

When using Equation SS-2a , if in a given hour the measured total NO_x mass emissions (lb) at the nonaffected units are greater than the mass emissions measured at the common stack (i.e., if the summation term to the right of the minus sign in Equation SS-2a is greater than the term to the left of the minus sign), this will result in negative mass emissions for that hour. For any hour in which this happens, substitute a value of zero for the total NO_x mass emissions from the affected units.

Table 22-2: Hourly NO_x Mass Emissions for the Affected Unit(s)

Equation Code	Formula	Where
SS-2a	$NOXM_{aff-tot} = NOXM_{CS} - \sum_{all-nonaff} NOXM_{nonaff}$	$NOXM_{aff-tot}$ = Total hourly NO_x mass emissions from the affected unit(s) (lb) $NOXM_{CS}$ = Hourly NO_x mass measured at the common stack (lb) $NOXM_{nonaff}$ = Hourly NO_x mass measured at a particular nonaffected unit (lb)
SS-2b	$NOXM_{aff-i} = NOXM_{aff-tot} \frac{MW_{aff-i} t_{aff-i}}{\sum_{all-aff} MW_{aff-i} t_{aff-i}}$	$NOXM_{aff-i}$ = Hourly NO_x mass emissions from a particular affected unit (lb) $NOXM_{aff-tot}$ = Total hourly NO_x mass emissions from the affected unit(s) (lb) $(MW)_{aff-i}$ = Hourly load for a particular affected unit (MW) t_{aff-i} = Operating time for a particular affected unit (hr)
SS-2c	$NOXM_{aff-i} = NOXM_{aff-tot} \frac{ST_{aff-i} t_{aff-i}}{\sum_{all-aff} ST_{aff-i} t_{aff-i}}$	$NOXM_{aff-i}$ = Hourly NO_x mass emissions from a particular affected unit (lb) $NOXM_{aff-tot}$ = Total hourly NO_x mass emissions from the affected unit(s) (lb) $(ST)_{aff-i}$ = Hourly load for a particular affected unit (klb/hr of steam) t_{aff-i} = Operating time for a particular affected unit (hr)

D. Affected Unit(s) Hourly Heat Input Rate Determination

Determine the hourly heat input rate for each affected unit using the applicable method described under Question 22.4.

E. Affected Unit Hourly Load and Operating Time

As indicated in Sections A through C, above, emissions from the affected units in a subtractive stack configuration are not measured directly. However, the owner or operator must maintain hourly records of unit load and unit operating time for each affected unit, for purposes of apportioning emissions and/or heat input to the individual affected units. Report these hourly values in RT 300.

References: § 75.72(b)(2)

Key Words: Flow monitoring, Heat input, NO_x monitoring

History: First published in March 2000, Update #12

Question 22.4

Topic: Reporting of Hourly Heat Input Rate

Question: How do I determine and report hourly heat input rates for a subtractive stack configuration?

Answer: Except for the circumstances described in the Notes at the end of this question, determine hourly heat input rates: (1) at the main common stack; (2) at any secondary common stack(s); (3) any common pipe(s) and (4) for each individual unit in the subtractive stack configuration (both affected and nonaffected units). Report the required heat input rate values in column 36 of RT 300. Determine the hourly heat input rates as follows:

A. Heat Input Rate Measured at the Main Common Stack Only

When heat input rate is measured only at the main common stack (for qualifying configurations, as described in Section C.(3) of Policy Question 22.2 or in Section B.(3) of Policy Question 22.3), apportion the hourly heat input rate at the common stack to each of the units in the subtractive stack configuration (both affected and nonaffected units) using Equation F-21a or F-21b in Appendix F to Part 75 (see Table 22-3), for each stack operating hour (each hour in which effluent gases discharge through the main common stack). The summation term in the denominator of these equations must include all unit loads (for both the affected and non-affected units).

Table 22-3: Hourly Heat Input Rate Apportionment and Summation Formulas

Equation Code	Formula	Where
F-21a	$$HI_i = HI_{CS}\left(\frac{t_{CS}}{t_i}\right)\left[\frac{MW_i\ t_i}{\sum_{i=1}^{n} MW_i\ t_i}\right]$$	HI_i = Heat input rate for a unit (mmBtu/hr) HI_{CS} = Heat input rate at the common stack or pipe (mmBtu/hr) MW_i = Gross electrical output for a unit (MWe) t_i = Operating time at a particular unit (hour or fraction of an hour) t_{CS} = Operating time at common stack (hour or fraction of an hour) n = Total number of units using the common stack or pipe i = Designation of a particular unit
F-21b	$$HI_i = HI_{CS}\left(\frac{t_{CS}}{t_i}\right)\left[\frac{SF_i\ t_i}{\sum_{i=1}^{n} SF_i\ t_i}\right]$$	HI_i = Heat input rate for a unit (mmBtu/hr) HI_{CS} = Heat input rate at the common stack or pipe (mmBtu/hr) SF_i = Gross steam load for a unit (klb/hr) t_i = Operating time at a particular unit (hour or fraction of an hour) t_{CS} = Operating time at common stack (hour or fraction of an hour) n = Total number of units using the common stack or pipe i = Designation of a particular unit
F-25	$$HI_{CS} = \frac{\sum_{all-units} HI_u t_u}{t_{CS}}$$	HI_{CS} = Heat input rate at the common stack (mmBtu/hr) HI_u = Heat input rate for a unit (mmBtu/hr) t_u = Operating time at a particular unit (hour or fraction of an hour) t_{CS} = Operating time at common stack (hour or fraction of an hour)

B. Heat Input Rate Measured at the Main Common Stack and the Nonaffected Unit(s)

When heat input rate is monitored or measured at both the main common stack and at the nonaffected unit(s), determine the heat input rate for each unit in the subtractive stack configuration as follows:

Scenario #1. For hours in which <u>both</u> affected and nonaffected units are operating and the total heat input in mmBtu measured at the main common stack is greater than the total heat input of the nonaffected unit(s):

(i) <u>For the affected units</u>:

(A) Use Equation SS-3a (see Table 22-4) to obtain the total hourly heat input for the affected units. The term on the left side of the minus sign in Equation SS-3a is the hourly total heat input at the main common stack (mmBtu), and is the product of the measured heat input rate in column 36 of RT 300 and the stack operating time in column 18 of RT 300. The term on the right hand side of the minus sign is the total hourly heat input for the nonaffected units, and is the sum of the products of the measured RT 300/36 heat input rates and the RT 300/18 unit operating times for all of the nonaffected units.

(B) If any nonaffected units are monitored as a group at a single location, then, for those units, replace the term $HI_{nonaff}\ t_{nonaff}$ in Equation SS-3a with the term $HI_{CS*}\ t_{CS*}$, where HI_{CS*} is the hourly heat input rate measured at the nonaffected units' monitoring location (designated as a secondary common stack) and t_{CS*} is the stack operating time at the secondary common stack.

(C) For each hour in which Scenario # 1 applies, calculate the individual affected unit heat rates using Equation SS-3b (see Table 22-4). Note that the summation term in the denominator of Equation SS-3b includes <u>only</u> the affected unit hourly loads.

(ii) <u>For the nonaffected units</u>:

(A) If the nonaffected units are individually monitored for heat input rate, report the measured hourly heat input rate value(s). This includes gas and oil-fired units using Appendix D procedures to determine heat input rate.

(B) If, for a group of nonaffected units, heat input rate is monitored at a single location (designated as a secondary common stack) using a flow monitor and a diluent CEM, apportion the heat input rate measured at the secondary common stack to the individual nonaffected units in the group, using Equation F-21a or F-21b in Appendix F to Part 75. When this methodology is used, replace the term t_{CS} in Equation F-21a or F-21b with the term t_{CS*}, where t_{CS*} is the stack operating time at the secondary common stack. Also, include only the hourly unit loads for the nonaffected units in the summation term in the denominator of Equation F-21a or F-21b.

(C) For a group of oil or gas-fired nonaffected units that receive fuel from a common pipe, apportion the heat input rate measured at the common pipe to the individual nonaffected units, using Equation F-21a or F-21b in Appendix F to Part 75. In using these equations, replace the term"t_{CS}" with the term "t_f", which is the fuel usage time for the common pipe.

Table 22-4: Hourly Heat Input Formulas for Affected Units

Equation Code	Formula	Where
SS-3a	$$HItot_{aff-hr} = HI_{CS} t_{CS} - \sum_{all-nonaff} HI_{nonaff}\, t_{nonaff}$$	$HItot_{aff\text{-}hr}$ = Total hourly heat input for the affected units (mmBtu) HI_{CS} = Hourly heat input rate at the common stack (mmBtu/hr) HI_{nonaff} = Hourly heat input rate for a particular nonaffected unit (mmBtu/hr) t_{CS} = Operating time for the common stack (hr) t_{nonaff} = Operating time for a particular nonaffected unit (hr)
SS-3b	$$HI_{aff} = \frac{1}{t_i} \times HItot_{aff-hr} \times \left(\frac{L_i t_i}{\sum_{all-aff} L_i t_i} \right)$$	HI_{aff} = Hourly heat input rate for a particular affected unit (mmBtu/hr) $HItot_{aff\text{-}hr}$ = Total hourly heat input for all affected units (mmBtu) t_i = Operating time for a particular affected unit (hr) L_i = Hourly unit load for an affected unit in the subtractive stack configuration (MW <u>or</u> klb of steam per hour)

Scenario #2. For any hour in which both nonaffected unit(s) and affected unit(s) are operating and the total heat input at the main common stack is less than or equal to the total heat input for the nonaffected unit(s), causing Equation

SS-3a to give a negative or zero total heat input value for the affected units, follow these procedures:

(i) Invalidate the result obtained from Equation SS-3a; and

(ii) Consider the heat input rate measured at the main common stack to be correct; and

(iii) Disregard all heat input rate(s) measured at the nonaffected unit(s); and

(iv) Apportion the heat input rate measured at the main common stack to all units (affected and nonaffected) in the subtractive stack configuration, using Equation F-21a or F-21b.

Scenario # 3. For any hour in which <u>only</u> affected units are operating,

(i) <u>For the affected units</u>:

(A) Set the summation term in Equation SS-3a equal to zero, so that the total heat input for the affected units equals the heat input measured at the main common stack.

(B) Then, use Equation SS-3b to determine the hourly heat input rate for each affected unit.

(ii) <u>For the nonaffected units</u>:

Assign a heat input rate value of zero to each nonaffected unit.

Scenario #4. For any hour in which <u>only</u> nonaffected units are exhausting to the common stack,

(i) <u>For the affected units</u>:

Assign a heat input rate value of zero to each affected unit.

(ii) <u>For the nonaffected units</u>:

(A) Invalidate all measured heat input rates for the nonaffected units; and

(B) Consider the heat input rate measured at the main common stack to be correct; and

(C) Apportion the heat input rate measured at the main common stack to the nonaffected units, using Equation F-21a or F-21b.

<u>Notes</u>: Units affected only by a State NO_x mass program (Subpart H or OTC) may not be required to report hourly heat input rate and cumulative heat input when using a stack flow monitor and NO_x concentration CEM to determine NO_x mass emissions. Consult your State rule to determine whether you are required to monitor heat input rate when using this methodology. Units affected only by 40 CFR Part 97 (Federal NO_x Trading Program) are required to report hourly heat input rate and cumulative heat input in these circumstances.

Heat input rate monitoring may not be required if your State does not require heat input for allocation purposes. If heat input rate monitoring and cumulative heat input accounting are not required, leave the heat input field(s) blank in RTs 300 and 307.

The use of common stack heat input rate apportionment is not allowed in all situations. Consult EPA and your State rule to determine whether you are allowed to apportion heat input rate.

References: Appendix F

Key Words: Heat input

History: First published in March 2000, Update #12

Question 22.5

Topic: Monitoring Plan Requirements

Question: What are the electronic monitoring plan reporting requirements for subtractive stack configurations?

Answer: For all units in the subtractive stack configuration, including the nonaffected unit(s), report all standard unit-level monitoring plan record types including unit data, program data, monitoring methodologies, controls and fuels (<u>i.e.</u>, RTs 504, 505, 585, 586, 587).

For the main common stack serving both affected and nonaffected units, define the relationship between the stack and units in RTs 503 and submit all the standard monitoring plan information to support the continuous emission monitoring systems (CEMS) at the common stack (RTs 510, 520, 530, 531, 535, and 536, as applicable). Report one RT 503 for each of the units served by the common stack.

If the combined emissions from a group of nonaffected units are monitored at a single location (i.e., a secondary common stack, serving only the nonaffected units), report one RT 503 for each nonaffected unit in the group that defines the relationship between the unit and the secondary common stack.

If a group of nonaffected units receives fuel from a common pipe, report one RT 503 for each unit in the group that defines the relationship between the unit and the common pipe.

For each nonaffected unit monitoring location, report all the standard monitoring plan information to support the CEMS or other monitoring systems for that location (RTs 510, 520, 530, 531, 535, 536, and 540, as applicable).

For each affected unit, report the applicable subtractive mass emissions and heat input formulas and any apportionment formulas in RTs 520 (i.e., Equations SS-1a, SS-1b, SS-2a, SS-2b, SS-2c, SS-3a, SS-3b, F-21a, F-21b, or F-25, as applicable).

If you petition and receive approval to use a minimum NO_x rate for missing data purposes, include the approved minimum rate in RT 531. Use the code "MNNX" as the parameter and "APP" (approval) as the source of data code. See Policy Question 22.10.

Also include a narrative description of the subtractive stack configuration and method used to determine NO_x mass emissions in RT 910, as described in Policy Question 22.11.

References: EDR v2.1, 500-level RTs

Key Words: Electronic report formats, Monitoring plan

History: First published in March 2000, Update #12

Question 22.6

Topic: QA Requirements

Question: What are the quality assurance requirements for the monitoring systems installed on the nonaffected unit(s) in a subtractive stack configuration?

Answer: The monitoring systems for the nonaffected unit(s) in a subtractive stack configuration must be fully certified in accordance with § 75.20 and must undergo the periodic quality assurance testing required under § 75.21 and Appendix B to Part 75. The bias test requirement in Section 7.6 of Appendix A to Part 75 also applies to the SO_2, NO_x, and flow rate monitoring systems installed on nonaffected units.

References: § 75.20, § 75.21; Appendix A, Section 7.6

Key Words: Certification tests, Quality assurance

History: First published in March 2000, Update #12

Question 22.7

Topic: Unit/Stack EDRs

Question: Should all the units and stacks involved in the subtractive configuration be included together in the same quarterly report?

Answer: Yes. Based on EPA guidance, all stack-level and associated unit-level data must be contained in a single quarterly report.

References: EDR v2.1

Key Words: Reporting

History: First published in March 2000, Update #12

Question 22.8

Topic: Reporting Hourly Emissions Data

Question: How do I report hourly emissions data for a subtractive stack configuration?

Answer: Report hourly data for the subtractive stack configuration at each monitored location (i.e., at the common stack and at each nonaffected unit monitoring location), as you would for any other configuration. Report only the measured data. Do not report the hourly mass emission values determined by subtraction for the *affected* units. If you have additional reporting questions, contact EPA.

References: § 75.64

Key Words: Reporting

History: First published in March 2000, Update #12

Question 22.9

Topic: Cumulative Emissions Data Reporting

Question: What quarterly, annual, and ozone season summary emissions and heat input data should I report for a subtractive configuration?

Answer: For each stack, pipe, or unit in the subtractive stack configuration (including both affected and nonaffected units), report a RT 301 (for units subject to the Acid Rain Program) and report a RT 307 (for units subject to Subpart H).

A. RT 301 for Acid Rain Program

Report separate RTs 301 for the main common stack, any secondary common stack(s), any common pipe(s), and for each unit in the subtractive stack configuration.

Two examples are provided for reference:

(1) If there is a main common stack, one affected unit and one nonaffected unit in the subtractive stack configuration, report three RTs 301 in each quarterly report: one for the common stack, one for the affected unit, and one for the nonaffected unit.

(2) If there is a main common stack through which four units exhaust to the atmosphere, two of which are nonaffected and two of which are affected, and if the nonaffected units are monitored at a secondary common stack location, report six RTs 301, one at the main common stack, one at the secondary common stack and one for each unit.

In the RT 301 for the main common stack, report the quarterly and year-to-date SO_2 mass emissions (tons) and heat input (mmBtu) values derived from the common stack monitors. Report the quarterly and cumulative NO_x emission rates (lb/mmBtu), as required by Part 75. Calculate all quarterly and cumulative emissions and heat input values in accordance with the applicable sections of the "EDR Version 2.1 Reporting Instructions."

In the RT 301 for a secondary common stack location at which a group of nonaffected units is monitored (if applicable), report all quarterly and cumulative SO_2 mass emissions and heat input values derived from the hourly CEMS measurements made at the monitoring location, or heat input apportioned to the secondary common stack location.

In the RT 301 for each nonaffected unit, report all required quarterly and cumulative heat input data (either measured or apportioned as appropriate). If the nonaffected unit is individually monitored for SO_2, also report quarterly and cumulative SO_2 mass emissions data. If the unit is not separately monitored, report only the quarterly and cumulative heat input information.

In the RT 301 for an affected unit, report the quarterly and cumulative heat input that was derived using one of the accepted methodologies in this policy. Also report quarterly and cumulative SO_2 mass emissions data. Use Equation SS-4 (see Table 22-5).

In the RT 301 for a common pipe, report the quarterly and cumulative heat input values derived from the hourly heat input rate measurements and fuel usage times at the common pipe. Also report the quarterly and cumulative SO_2 mass emissions derived from the fuel flowmeter readings, fuel sampling data, and fuel usage times.

(Note: The reporting of NO_x emission rate for the individual affected and nonaffected units in the subtractive stack configuration is beyond the scope of this policy. For further guidance, see Section 24.)

Table 22-5: Quarterly, Year-to-date, or Ozone Season Mass Emissions for Subtractive Stacks

Equation Code	Formula	Where
SS-4	$$M_{YTD} = \frac{\sum_{i=1}^{n} M_i}{2000}$$	M_{YTD} = Quarterly, ozone season or year-to-date SO_2 or NO_x mass emissions (tons) M_i = Hourly SO_2 or NO_x mass emissions value, as determined under this policy (lb) 2000 = Conversion factor from lb to tons n = Number of unit or stack operating hours in the reporting period i = Designation of a particular hour

B. RT 307 for Subpart H

Report separate RTs 307 for the main common stack, any secondary common stack(s), any common pipe(s), and each unit in the subtractive stack configuration.

Two examples are provided for reference:

(1) If there is a main common stack, one affected unit and one nonaffected unit in the subtractive stack configuration, report three RTs 307 in each quarterly report: one for the common stack, one for the affected unit, and one for the nonaffected unit.

(2) If there is a main common stack through which four units exhaust to the atmosphere, two of which are nonaffected and two of which are affected, and if the nonaffected units are monitored at a secondary common stack location, report six RTs 307, one at the main common stack, one at the secondary common stack and one for each unit.

In the RT 307 for the main common stack, report the quarterly and cumulative NO_x mass emissions and heat input values derived from the common stack monitors. Calculate the quarterly and cumulative NO_x mass emissions according to the applicable sections of the "EDR Version 2.1 Reporting Instructions."

In the RT 307 for a secondary common stack location at which a group of nonaffected units is monitored (if applicable), report all quarterly and cumulative NO_x mass emissions and heat input values derived from the hourly CEMS or corresponding fuel flowmeter measurements made at the monitoring location.

In the RT 307 for a nonaffected unit, report any required heat input data (derived either from measured or apportioned heat input rates, as appropriate). If the unit is individually monitored for NO_x, also report quarterly and cumulative NO_x mass emissions data.

In the RT 307 for an affected unit, report the quarterly and cumulative heat input derived using one of the accepted methodologies in this policy. Also report quarterly and cumulative NO_x mass emissions data. Calculate the quarterly and cumulative NO_x mass emissions for the affected unit using Equation SS-4 (see Table 22-5).

In the RT 307 for a common pipe, report the quarterly and cumulative heat input values derived from the hourly heat input rate measurements and fuel usage times at the common pipe.

References: EDR v2.1, RT 301, RT 307

Key Words: Electronic report formats

History: First published in March 2000, Update #12

Question 22.10

Topic: Missing Data Requirements

Question: What missing data requirements apply to nonaffected units in a subtractive stack configuration?

Answer: For the common stack, use the standard missing data procedures in § 75.33.

For the nonaffected unit(s), use inverse missing data procedures for SO_2, NO_x, CO_2 and flow rate missing data (i.e., substitute the 10th percentile value when the standard missing data procedures in § 75.33 require the 90th percentile value, use the 5th percentile value in lieu of the 95th percentile value, use the minimum value in the look back periods instead of the maximum value, and use zeros for the minimum potential NO_x emission rate, minimum potential flow rate or minimum potential concentration for any hours in which maximum potential values would ordinarily be used under Subpart D of Part 75). The owner or operator may petition the Administrator under § 75.66 to use minimum potential values other than zero.

If O_2 data, rather than CO_2 data, are used in the heat input rate calculations, use the regular missing data algorithm, rather than the inverse algorithm to provide substitute O_2 data for the heat input rate determinations.

For moisture missing data, use the regular missing data algorithm, unless Equation 19-3, 19-4, or 19-8 is used for NO_x emission rate determination, in which case, use the inverse missing data algorithm.

Use the missing data method of determination codes specified in Table 4a in Part 75.

References: § 75.33, § 75.66; 40 CFR Part 60, Appendix A, RM 19

Key Words: Missing data, Reporting

History: First published in March 2000, Update #12

Question 22.11

Topic: Representation of Subtractive Configuration in EDR

Question: How do I identify in the EDR submission the method of calculating NO_x or SO_2 mass emissions for the affected units?

Answer: Use RT 910 to identify the method used to calculate compliance. The following format (in italics) should be used to provide information on the determination of NO_x or SO_2 emissions for the affected and nonaffected units.

I. *This common stack EDR submission for the following units is a [SO_2 or NO_x] subtractive configuration.*

Main Common Stack: [Stack ID]
Affected unit IDs: [list IDs separated by commas]
Nonaffected unit IDs: [list IDs separated by commas]

Secondary Common Stack (if applicable)
for Nonaffected Units: [Stack ID]
Nonaffected unit IDs: [list IDs separated by commas]

Common Pipe (if applicable)
for Nonaffected Units: [Pipe ID]
Nonaffected unit IDs: [list IDs separated by commas]

II. SO_2 mass emission methodology at the main common stack:

Report one of the following, as applicable:

(1) Stack flow and SO_2 concentration CEM; or

(2) Other approved methodology at the common stack (describe)

III. SO_2 mass emission methodology for the nonaffected units or nonaffected units' secondary common stack:

Report one of the following, as applicable:

(1) SO_2 concentration CEM(s) and flow monitor(s); or

(2) Appendix D methodology

IV. NO_x mass emission methodology at the main common stack:

Report one of the following, as applicable:

(1) NO_x-diluent CEM and a stack flow monitor and diluent monitor; or

(2) NO_x concentration CEM and a stack flow monitor; or

(3) NO_x-diluent CEM and Appendix D heat input rate methodology

V. NO_x mass emissions methodology for the nonaffected units or nonaffected units' secondary common stack:

Report one of the following, as applicable:

(1) NO_x-diluent CEM(s), stack flow monitor(s) and diluent monitor(s); or

(2) NO_x concentration CEM(s) and stack flow monitor(s); or

(3) NO_x-diluent CEM(s) and apportionment of main common stack heat input rate; or

(4) NO_x-diluent CEM(s) and Appendix D heat input rate methodology

References: EDR v2.1, RT 910

Key Words: Electronic report formats

History: First published in March 2000, Update #12

Question 22.12

Topic: Subtractive Configuration Examples

Question: Are there any examples of units which currently have subtractive configurations?

Answer: Several examples will be provided in the future to describe actual subtractive stack situations to help explain reporting for these situations.

References: N/A

Key Words: N/A

History: First published in March 2000, Update #12

SECTION 24: COMMON STACK NO_x EMISSION RATE MONITORING AND APPORTIONMENT

Background

I. Forty CFR 75.17(a)(1) and 75.17(a)(2)(i) allow the owner or operator of a group of NO_x affected units (see definition below) that exhaust into a common stack to demonstrate compliance with the applicable NO_x emission limits in the following ways:

A. Monitor the NO_x emission rate separately for each unit, in the duct from the unit to the common stack; or

B. Monitor the NO_x emission rate at the common stack <u>and</u> submit a compliance plan for approval by the permitting authority which indicates that:

(1) Each unit will comply with the most stringent NO_x emission limitation of any unit using the common stack; or

(2) Each unit will comply with the applicable NO_x emission limit by averaging its emissions with other units utilizing the common stack, pursuant to 40 CFR Part 76; or

(3) A petition will be submitted to determine each unit's NO_x compliance by an alternative method, satisfactory to the Administrator, using apportionment of the common stack NO_x emission rate and ensuring complete and accurate estimation of emissions.

II. Section 75.17(a)(2)(iii) allows an owner or operator of one or more NO_x affected units that exhaust into a common stack with NO_x nonaffected units (see definition below) to demonstrate that the NO_x affected unit(s) meet the applicable NO_x emission limitation(s) in the following ways:

A. Monitor the NO_x emission rate in the duct from each unit to the common stack; or

B. Petition the Administrator for approval of an alternative method to determine each unit's NO_x emission rate by an alternative method using apportionment of the common stack NO_x emission rate and ensuring complete and accurate estimation of emissions.

III. Section 75.17(b) allows an owner or operator of one or more Acid Rain units (see definition below) that exhaust into a common stack with one or more non-Acid Rain units (see definition below) to determine the NO_x emission rate(s) of the Acid Rain unit(s) in the following ways:

A. Monitor NO_x emission rate in the duct from each Acid Rain unit to the common stack; or

B. Petition the Administrator for approval of an alternative method to determine each unit's NO_x emission rate by an alternative method using apportionment of the common stack NO_x emission rate and ensuring complete and accurate estimation of emissions.

Definitions

Acid Rain Unit: A unit subject to any Acid Rain emissions limitation under 40 CFR Parts 72 and 74, or 76.

Main Common Stack: A stack through which the combined emissions from a group of units discharge to the atmosphere.

Non-Acid Rain Unit: A unit not subject to any SO_2 or NO_x Acid Rain emission limitation under 40 CFR Parts 72, 74, or 76.

NO_x Affected Unit: An Acid Rain unit which is subject to a NO_x emission limitation under 40 CFR Part 76.

NO_x Nonaffected Unit: An Acid Rain unit which is not subject to a NO_x emission limitation under 40 CFR Part 76.

Secondary Common Stack: A location in the ductwork, upstream of the main common stack, where the combined heat input rate and/or combined emissions from two or more units are monitored.

Question 24.1

Topic: Purpose of Common Stack NO_x Apportionment Policy

Question: What is the purpose of this policy?

Answer: If you have a common stack exhaust configuration consisting of either: (1) a group of NO_x affected units; or (2) a combination of NO_x affected units and NO_x nonaffected units; or (3) a combination of Acid Rain units and non-Acid Rain units, and if you wish to use common stack NO_x apportionment to determine unit-specific NO_x emission rates (see options I.B (3), II.B, and III.B under BACKGROUND section, above), this policy provides guidance on emissions monitoring and reporting.

Common stack NO_x apportionment is a methodology by which unit-specific NO_x emission rates are determined for a group of units that exhaust into a common stack, without monitoring each unit in the group separately.

You must petition the Administrator under § 75.66 for permission to use common stack NO_x apportionment. If your petition is consistent with the provisions of this policy, you have reasonable assurance that the petition will be approved and your monitoring will be consistent with other facilities using common stack NO_x apportionment.

References: § 75.17(a), § 75.17(b), § 75.66

Key Words: NO_x apportionment

History: First published in March 2000, Update #12

Question 24.2

Topic: NO_x Apportionment Methodologies

Question: For an exhaust configuration in which NO_x affected units and NO_x nonaffected units share a common stack, are there any common stack NO_x apportionment methodologies that may be approved by petition?

Answer: EPA considers two common stack NO_x apportionment methodologies to be approvable for the configuration: (1) the subtractive apportionment methodology; and (2) the simple NO_x apportionment methodology.

A. Subtractive Apportionment Methodology

(1) Summary of Method and Basis for Approval

Under the subtractive apportionment methodology, the hourly NO_x emission rate, heat input rate, and operating time are monitored at both at the common stack and at the NO_x nonaffected unit(s). These values are used to determine the total heat input and NO_x mass emissions at these locations. The hourly NO_x mass emissions and total heat input for the NO_x affected units are then determined by subtracting the measured NO_x mass emissions and total heat input values for the NO_x nonaffected units from the corresponding values measured at the common stack. Finally, the hourly NO_x emission rate for the NO_x affected units is calculated by dividing the NO_x mass emissions for the NO_x affected units by the total heat input for the NO_x affected units.

This methodology is approvable because it is based on a mass balance approach and uses Part 75 monitoring methodologies for both heat input and NO_x emission rate.

(2) Main Common Stack Monitoring Requirements

(a) Monitor the hourly NO_x emission rate at the main common stack using NO_x-diluent CEMS.

(b) Determine the hourly heat input rate at the common stack using a diluent monitor and a flow monitor.

(3) NO_x Nonaffected Unit NO_x Emission Rate and Heat Input Rate Monitoring Requirements

There are two options for monitoring NO_x emission rate at the NO_x nonaffected units:

(a) Option 1: You may install a NO_x-diluent CEMS in duct leading from each NO_x nonaffected unit to the main common stack. When this option is selected, determine the heat input rate for each NO_x nonaffected unit using one of the following methods:

(i) Install a flow monitor and a diluent monitor in the duct leading from each NO_x nonaffected unit to the main common stack; or

(ii) Use <u>individual</u> fuel flowmeters and the procedures of Appendix D of 40 CFR Part 75 (oil or gas-fired units only) to determine the heat input rate at each NO_x nonaffected unit. Heat input rate apportionment from a common pipe is not allowed in this case; or

(iii) Use Equation F-21a or F-21b in Appendix F of 40 CFR Part 75 (see Table 24-1) to apportion the heat input rate measured at the main common stack to <u>all</u> units in the configuration (<u>i.e.</u>, both NO_x affected and NO_x nonaffected units). Note that this method may only be used if the following three conditions are met:

(A) All units exhausting to the main common stack combust the same type of fuel and use the same F-factor; and

(B) All units exhausting to the main common stack have similar combustion efficiencies (± 10%); and

(C) There is no suitable location for a flow monitor and diluent monitor in the existing ductwork where NO_x emission rate is monitored.

If none of these three methods can be used to determine heat input rate, contact EPA for guidance.

(b) <u>Option 2</u>: If the emissions from a group of NO_x nonaffected units are combined prior to exhausting to the main common stack, you may monitor the combined NO_x emission rate for the group of units using a single NO_x-diluent CEMS. When this option is selected, designate the monitored location as a "secondary common stack" (see Definitions, above) and determine the heat input rate at the secondary common stack <u>and</u> at each NO_x nonaffected unit using one of the following methods:

(i) Monitor the heat input rate at the secondary common stack directly, using a flow monitor and diluent monitor. If this option is selected, use Equation F-21a or F-21b to apportion the heat input rate measured at the secondary common stack to the individual units. Replace the term t_{CS} in Equation F-21a or F-21b with the term t_{CS*}, where t_{CS*} is the stack operating time at the secondary common stack. Also, in the summation term in the denominator of Equation F-21a or F-21b, include only the hourly unit loads for the units associated with the secondary common stack.

Note that the restrictions listed under Paragraph (A)(3)(a)(iii) of this Question on the use of Equations F-21a and F-21b do not apply in this case; or

(ii) Monitor the heat input rate at each NO_x nonaffected unit using a fuel flowmeter and the procedures of Appendix D (oil and gas-fired units only), and determine the heat input rate at the secondary common stack using Equation F-25 (see Table 24-1, below); or

(iii) Monitor the heat input rate at a common pipe which serves only the units associated with the secondary common stack, using a fuel flowmeter and the procedures of Appendix D (oil and gas-fired units, only). In this case, you must first determine the individual unit heat input rates using Equation F-21a or F-21b and then use these rates, in conjunction with Equation F-25, to derive the heat input rate at the secondary common stack. In using Equations F-21a and F-21b, replace the term "t_{CS}" with the term "t_f", which is the fuel usage time for the common pipe.

Note that the restrictions listed under Paragraph (A)(3)(a)(iii) on the use of Equations F-21a and F-21b do not apply in this case; or

(iv) Use Equation F-21a or F-21b to apportion the heat input rate measured at the main common stack to all units in the configuration (i.e., both NO_x affected and NO_x nonaffected units). Then use the apportioned unit level heat inputs and Equation F-25 to determine the heat input rate at the secondary common stack. Note that this option may only be used if the following three conditions are met:

(A) All units exhausting to the main common stack combust the same type of fuel and use the same F-factor; and

(B) All units exhausting to the main common stack have similar combustion efficiencies (±10%); and

(C) There is no suitable location for a flow monitor in the existing ductwork.

If none of these three methods can be used to determine the heat input rate for the NO_x nonaffected units, contact EPA for guidance.

(4) Hourly Heat Input Rate and Operating Time Reporting

Report hourly heat input rate and operating time in RT 300 for the main common stack, any secondary common stack(s), any common pipe(s) and for each unit in the configuration (i.e., for both NO_x affected and NO_x nonaffected units). Determine the hourly heat input rates for the main common stack, secondary common stack(s), common pipe(s) and for the individual NO_x nonaffected units as described in paragraphs (A)(2) and (A)(3) of this Policy Question. See Policy Question 24.3 for a discussion of how to determine the hourly heat input rates for the NO_x affected units.

Table 24-1: Hourly Heat Input Rate Apportionment and Summation Formulas

Equation Code	Formula	Where
F-21a	$$HI_i = HI_{CS}\left(\frac{t_{CS}}{t_i}\right)\left[\frac{MW_i\ t_i}{\sum_{i=1}^{n} MW_i\ t_i}\right]$$	HI_i = Heat input rate for a unit (mmBtu/hr) HI_{CS} = Heat input rate at the common stack or pipe (mmBtu/hr) MW_i= Gross electrical output for a particular unit (MWe) t_i = Operating time at a particular unit (hour or fraction of an hour) t_{CS} = Operating time at common stack (hour or fraction of an hour) n = Total number of units using the common stack or pipe i = Designation of a particular unit
F-21b	$$HI_i = HI_{CS}\left(\frac{t_{CS}}{t_i}\right)\left[\frac{SF_i\ t_i}{\sum_{i=1}^{n} SF_i\ t_i}\right]$$	HI_i = Heat input rate for a unit (mmBtu/hr) HI_{CS} = Heat input rate at the common stack or pipe (mmBtu/hr) SF_i = Gross steam load for a particular unit (klb/hr) t_i = Operating time at a particular unit (hour or fraction of an hour) t_{CS} = Operating time at common stack (hour or fraction of an hour) n = Total number of units using the common stack or pipe i = Designation of a particular unit
F-25	$$HI_{cs} = \frac{\sum_{all-units} HI_u t_u}{t_{cs}}$$	HI_{CS} = Heat input rate at the common stack (mmBtu/hr) HI_u = Heat input rate for a unit (mmBtu/hr) t_u = Operating time at a particular unit (hour or fraction of an hour) t_{CS} = Operating time at common stack (hour or fraction of an hour)

(5) Determination of NO_x Affected Unit(s) NO_x Emission Rate

Calculate the hourly, quarterly, and year-to-date NO_x emission rates for the NO_x affected units as follows:

(a) Determine a single hourly NO_x emission rate which applies to all NO_x affected units using Equation NS-1 (see Table 24-2). The terms NOx_{nonaff}, HI_{nonaff}, and t_{nonaff} in Equation NS-1, must be used consistently. For example, when NO_x emission rate and heat input rate are monitored at the unit level, NOx_{nonaff}, HI_{nonaff}, and t_{nonaff} are, respectively, the NO_x emission rate, heat input rate, and operating time for an individual NO_x nonaffected unit. When a group of NO_x nonaffected units is monitored at a secondary common stack, NOx_{nonaff}, HI_{nonaff}, and t_{nonaff} are, respectively, the NO_x emission rate, heat input rate, and operating time at the secondary common stack.

(b) Record, but do not report, the hourly NO_x emission rates determined from Equation NS-1 for the NO_x affected units. Maintain these data in a format suitable for inspection. It is sufficient to record these values in your DAHS if they can be retrieved upon request during an audit.

(c) Calculate the quarterly and year-to-date NO_x emission rate for each NO_x affected unit using Equation F-9 in Appendix F of 40 CFR Part 75. Report these values as described in Policy Question 24.9.

Table 24-2: Hourly NO_x Apportionment Formula for NO_x Affected Units Using the Subtractive Methodology

Equation Code	Formula	Where
NS-1	$NOx_{aff} = \dfrac{(NOx_{CS} \times HI_{CS} \times t_{CS}) - \sum_{all-nonafected}\left(NOx_{nonaff} \times HI_{nonaff} \times t_{nonaff}\right)}{\sum_{allaffected}(HI_{aff} \times t_{aff})}$	NOx_{aff} = Hourly NO_x emission rate for the NO_x affected units (lb/mmBtu) NOx_{CS} = Hourly NO_x emission rate at the common stack for the quarter (lb/mmBtu) HI_{cs} = Hourly heat input rate at the common stack (mmBtu/hr) t_{CS} = Common stack operating time (hr) NOx_{nonaff} = Hourly NO_x emission rate at the NO_x nonaffected unit or second common stack. (lb/mmBtu) HI_{nonaff} = Hourly heat input for the NO_x nonaffected unit (mmBtu) t_{nonaff} = NO_x nonaffected unit or second common stack

B. Simple NO_x Apportionment

(1) Summary of Method and Basis for Approval

Under simple NO_x apportionment, the hourly NO_x emission rate and heat input rate are monitored at the common stack and the hourly heat input rates for the individual units in the configuration are determined by direct measurement or by apportionment. The hourly emission rate of the NO_x affected unit(s) is calculated by dividing the total NO_x mass emissions from all units (in lb) by the total heat input (in mmBtu) from only the NO_x affected units.

This methodology is environmentally beneficial because it assures compliance of the NO_x affected units, by overestimating the NO_x emission rates for these units. The method assumes that all of the NO_x mass emissions measured in the common stack come from the NO_x affected units (i.e., that the NO_x nonaffected units contribute zero NO_x emissions to the total NO_x emissions measured at the common stack). The methodology may also provide environmental benefits by encouraging owners and operators of NO_x affected units to lower NO_x emissions at the NO_x affected units.

Despite these environmentally beneficial aspects, approval of this methodology must still be on a case-by-case basis. Section 75.17(a)(iii)(B) requires "complete and accurate" estimation of the regulated emissions (i.e., for the emissions from the NO_x affected units). EPA must therefore make a case-by-case determination of whether the assumption that all emissions come from the NO_x affected units will cause significant error that may preclude the use of this option.

EPA anticipates that simple NO_x apportionment will likely be used for common stack configurations involving low capacity, small, or low emitting NO_x nonaffected units.

(2) Main Common Stack Monitoring Requirements

(a) Monitor the hourly NO_x emission rate at the main common stack using a NO_x-diluent CEMS.

(b) Determine the hourly heat input rate at the main common stack using a flow monitor and a diluent monitor.

(3) Heat Input Rate Determination for the Individual Units

Determine the hourly heat input rate for each unit which exhausts to the main common stack (i.e., both NO_x affected and NO_x nonaffected units), using any of the following methods:

(a) Install a flow monitor and a diluent monitor in the duct leading from the unit to the main common stack; or

(b) Use a fuel flowmeter and the procedures of Appendix D (oil or gas-fired units only), to determine the heat input rate at the unit; or

(c) Monitor the heat input rate for a group of NO_x nonaffected units at a secondary common stack (see Definitions section, above) using a flow monitor and diluent monitor, and then apportion the heat input rate measured at the secondary common stack to the individual units, using Equation F-21a or F-21b. Replace the term t_{CS} in Equation F-21a or F-21b with the term t_{CS*}, where t_{CS*} is the stack operating time at the secondary common stack. Also, in the summation term in the denominator of Equation F-21a or F-21b, include only the hourly unit loads for the units associated with the secondary common stack.

Note that the restriction under Paragraph (B)(3)(e) of this Policy Question on the use of Equations F-21a and F-21b does not apply in this case; or

(d) Monitor the heat input rate at a common pipe which serves a group of NO_x nonaffected gas or oil fired units using the procedures of Appendix D. In this case, determine the individual unit heat input rates using Equation F-21a or F-21b.

Note that the restriction under Paragraph (B)(3)(e), below, on the use of Equations F-21a and F-21b does not apply in this case; or

(e) Use Equation F-21a or F-21b to apportion the heat input rate measured at the main common stack to all units (i.e., both NO_x affected and NO_x nonaffected units.

Note that this method may only be used if the following condition is met: all units exhausting to the main common stack combust the same type of fuel and use the same F-factor.

(4) Hourly Heat Input Rate and Operating Time Reporting for all Units

Report hourly heat input rate and operating time in RT 300 for the main common stack, any secondary common stack(s), any common pipe(s) and for each unit in the configuration (i.e.,both NO_x affected and NO_x nonaffected units). Determine the hourly heat input rates for the main common stack, secondary common stack(s), common pipe(s) and for the individual units as described in Paragraphs (B)(2) and (B)(3) of this Policy Question.

(5) Determination of NO_x affected Unit(s) NO_x Emission Rate

Calculate the hourly, quarterly and year-to-date NO_x emission rates for the NO_x affected unit(s) as follows:

(a) Determine the hourly NO_x emission rate for the NO_x affected units using Equation NS-2 (see Table 24-3). Equation NS-2 calculates a single NO_x emission rate which applies to all NO_x affected units.

(b) Record, but do not report, the hourly NO_x emission rates determined from Equation NS-2. Maintain these data in a format suitable for inspection. It is sufficient to record these values in your DAHS if they can be retrieved upon request during an audit.

(c) Calculate the quarterly and year-to-date NO_x emission rate for each NO_x affected unit using Equation F-9 in Appendix F of 40 CFR Part 75. Report these values as described in Policy Question 24.9.

Table 24-3: Hourly NO_x Apportionment Formula for NO_x Affected Units Using Simple NO_x Apportionment

Equation Code	Formula	Where
NS-2	$$NO_{x_{aff}} = \frac{NO_{x_{cs}} \times HI_{cs} \times t_{cs}}{\sum_{all-affected} HI_{aff} \times t_{aff}}$$	NOx_{aff} = Hourly NO_x emission rate for the NO_x affected unit(s) (lb/mmBtu) NOx_{CS} = Hourly NO_x emission rate at the common stack (lb/mmBtu) HI_{CS} = Hourly heat input rate at the common stack (mmBtu/hr) t_{CS} = Common stack operating time (hr) HI_{aff} = Hourly heat input rate for the NO_x affected unit(s) (mmBtu/hr) t_{aff} = NO_x affected unit operating time (hr)

References: § 75.17

Key Words: NO_x apportionment

History: First published in March 2000, Update #12

Question 24.3

Topic: Reporting of Hourly Heat Input Rate

Question: How do I determine hourly heat input rate for the NO_x affected and NO_x nonaffected units in the configuration described in Question 24.2?

Answer: **A. Heat Input Rate Measured at the Main Common Stack Only**

For a qualifying configuration under Section A (subtractive apportionment) or Section B (simple apportionment) of Policy Question 24.2, in which heat input rate is measured only at the main common stack, apportion the hourly heat input rate at the common stack to each of the units in the configuration (both NO_x affected and NO_x nonaffected units) using Equation F-21a or F-21b in Appendix F of 40 CFR Part 75, for each stack operating hour (i.e., each hour in which fuel is combusted by any unit in the configuration). The summation term in the denominator of these equations must include all unit loads (for both the NO_x affected and NO_x nonaffected units).

B. Heat Input Rate Measured at the Main Common Stack and the NO_x Nonaffected Unit(s)

Use the procedures of this section to determine the heat input rate at the NO_x affected units only when heat input rate is monitored or measured at both the main common stack and at the individual NO_x nonaffected units (or at a secondary common stack serving only the NO_x nonaffected units).

(1) For all hours in which any NO_x affected unit is operating, use Equation SS-3a (see Table 24-2) to calculate the total heat input to the NO_x affected unit(s).

The term on the left side of the minus sign in Equation SS-3a is the hourly total heat input (mmBtu) at the main common stack and is the product of the measured heat input rate in RT 300/36 and the stack operating time in RT 300/18.

The term on the right side of the minus sign is the total hourly heat input for the NO_x nonaffected units and is the sum of the products of the measured RT 300/36 heat input rates (as determined under Question 24.2) and the RT 300/18 unit operating times for all of the NO_x nonaffected units.

When a group of NO_x nonaffected units is monitored at a single location, then, for those units, replace the term $HI_{nonaff}\ t_{nonaff}$ in Equation SS-3a with the term $HI_{CS*}\ t_{CS*}$, where HI_{CS*} is the hourly heat input rate measured at the NO_x nonaffected units' monitoring location (designated as a secondary common stack) and t_{CS*} is the stack operating time at the secondary common stack.

Use the guidelines in the following three scenarios to ensure proper application of Equation SS-3a:

Scenario #1. For any hour in which the total heat input in mmBtu measured at the main common stack is greater than the total heat input of the NO_x nonaffected unit(s), use Equation SS-3a to obtain the total hourly heat input for the NO_x affected units.

For each hour in which Scenario # 1 applies, calculate the individual NO_x affected unit heat rates using Equation SS-3b (see Table 24-2). Note that the summation term in the denominator of Equation SS-3b includes only the hourly loads for the NO_x affected unit(s).

Scenario #2. For any hour in which the total heat input at the main common stack is less than or equal to the total heat input for the NO_x nonaffected unit(s), causing Equation SS-3a to give a negative or zero total heat input value for the NO_x affected units, follow these procedures:

(a) Invalidate the result obtained from Equation SS-3a;

(b) Consider the heat input rate measured at the main common stack to be correct;

(c) Disregard all heat input rate(s) measured at the NO_x nonaffected unit(s); and

(d) Apportion the heat input rate measured at the main common stack to all units (NO_x affected and NO_x nonaffected) in the subtractive stack configuration, using Equation F-21a or F-21b.

Scenario # 3. For any hour in which only NO_x affected units are operating, set the summation term in Equation SS-3a equal to zero, so that the total heat input for the NO_x affected units equals the heat input measured at the main common stack. Then, use Equation SS-3b to determine the hourly heat input rate for each NO_x affected unit.

(2) For any hour in which only NO_x nonaffected units are exhausting to the common stack, do not use Equation SS-3a. Assign a value of zero to the heat input rates for the NO_x affected units. Then, for the NO_x nonaffected units:

(a) Disregard all measured heat input rate values for the NO_x nonaffected units; and

(b) Assume that the heat input rate at the main common stack is correct and apportion this heat input rate to the NO_x nonaffected units using Equation F-21a or F-21b.

Table 24-4: Hourly Heat Input Formulas for NO_x Affected Units

Equation Code	Formula	Where
SS-3a	$$HItot_{aff-hr} = HI_{CS}t_{CS} - \sum_{all-nonaff} HI_{nonaff}t_{nonaff}$$	$HItot_{aff\text{-}hr}$ = Total hourly heat input for the NO_x affected units (mmBtu) HI_{CS} = Hourly heat input rate at the common stack (mmBtu/hr) HI_{nonaff} = Hourly heat input rate for a particular NO_x nonaffected unit (mmBtu/hr) t_{CS} = Operating time for the common stack (hr) t_{nonaff} = Operating time for a particular NO_x nonaffected unit (hr)
SS-3b	$$HI_{aff} = \frac{1}{t_i} \times HItot_{aff-hr} \times \left(\frac{L_i t_i}{\sum_{all-aff} L_i t_i} \right)$$	HI_{aff} = Hourly heat input rate for a particular NO_x affected unit (mmBtu/hr) $HItot_{aff\text{-}hr}$ = Total hourly heat input for all NO_x affected units (mmBtu) t_i = Operating time for a particular NO_x affected unit (hr) L_i = Hourly unit load for a particular NO_x affected unit in the subtractive stack configuration (MW <u>or</u> klb of steam per hour)

References: § 75.16(e)

Key Words: Heat input

History: First published in March 2000, Update #12

Question 24.4

Topic: Common Stack NO_x Apportionment for Other Configurations

Question: Question 24.2 addresses only common stack NO_x apportionment for a configuration consisting of NO_x affected and NO_x nonaffected units. What are the similarities and differences in the common stack NO_x apportionment methodologies for other configurations? In particular, address the following cases: (1) a configuration in which Acid Rain units share a common stack with non-Acid Rain units; and (2) a configuration in which a group of NO_x affected units share a common stack.

Answer: For the first configuration (Acid Rain and non-Acid Rain units sharing a common stack), the procedures and mathematics are exactly analogous to the case described in Question 24.2. Simply replace the term "NO_x affected unit" with the term, "Acid Rain unit" and replace the term "NO_x nonaffected unit" with the term "non-Acid Rain unit."

However, the second configuration (NO_x affected units sharing a common stack) is not analogous to the case described in Question 24.2, as there are no NO_x nonaffected units. Options (1), (2), and (3) in BACKGROUND section (I)(B), above, apply. If Option (3) is chosen, the owner or operator must submit a petition for an alternate apportionment method, satisfactory to the Administrator, ensuring complete and accurate estimation of emissions and no underestimation of any unit's emissions.

References: § 75.17

Key Words: NO_x apportionment

History: First published in March 2000, Update #12

Question 24.5

Topic: Monitoring Plan Requirements

Question: What are the monitoring plan requirements for the common stack NO_x apportionment described in Question 24.2?

Answer: For all units, including the NO_x nonaffected unit(s), report all standard unit-level record types including unit data, program data, monitoring methodologies, controls, and fuels (RTs 504, 505, 506, 585, 586, and 587).

For the main common stack serving both NO_x affected and NO_x nonaffected units, define the relationship between the stack and units in RTs 503 and submit all the standard monitoring plan information to support continuous emission monitoring systems (CEMS) at the common stack (RTs 510, 520, 530, 531, 535, and 536, as applicable). Report a RT 503 for each of the units served by the common stack.

For each NO_x nonaffected unit monitoring location, report all the standard monitoring plan information to support the CEMS, other monitoring systems or apportionment formulas at that location (RTs 510, 520, 530, 531, 535, 536, and 540). For each NO_x affected unit, report the appropriate heat input apportionment formula in RT 520 (see Question 24.3).

If the combined emissions from a group of units are monitored at a "secondary common stack" (see Definitions, above), report one RT 503 for each unit in the group, defining the relationship between the unit and the secondary common stack.

If a group of oil or gas-fired NO_x nonaffected units receives fuel from a common pipe, report one RT 503 for each unit in the group that defines the relationship between the unit and the common pipe.

If you petition and receive approval to use a minimum NO_x rate for missing data purposes, include the approved minimum rate in RT 531, using the code "MNNX" as the parameter and "APP" (approved) as the source of data code (see Policy Question 24.11).

Also include a narrative description of the NO_x apportionment configuration and reporting approach in RTs 910 (see Policy Question 24.12).

References: EDR v2.1 Reporting Instructions

Key Words: Monitoring plans

History: First published in March 2000, Update #12

Question 24.6

Topic: QA Requirements

Question: When common stack NO_x apportionment is used, what are the quality assurance requirements for monitoring systems installed in the duct(s) leading from NO_x nonaffected unit(s) or non-Acid Rain unit(s) to the common stack?

Answer: The monitoring systems located at the NO_x nonaffected unit or non-Acid Rain unit must be fully certified in accordance with testing required under § 75.21 and Appendix B to 40 CFR Part 75. The bias test requirement in Section 7.6

of Appendix A to 40 CFR Part 75 also applies to NO_x and flow rate monitoring systems installed on NO_x nonaffected units.

References: EDR v2.1 Reporting Instructions

Key Words: BAF, Quality assurance

History: First published in March 2000, Update #12

Question 24.7

Topic: Unit/Stack EDRs

Question: Should all of the units, pipes and stacks involved in a common stack NO_x apportionment configuration be included together in the same quarterly report?

Answer: Yes. Based on prior EPA guidance, all stack or pipe-level and associated unit-level data should be contained in a single quarterly report.

References: EDR v2.1 Reporting Instructions

Key Words: Electronic report formats

History: First published in March 2000, Update #12

Question 24.8

Topic: Reporting of Hourly NO_x Emission Rate and Heat Input Rate Data

Question: How do I report hourly data for a common stack NO_x apportionment?

Answer: Report hourly NO_x emission rate and heat input rate data for a common stack NO_x apportionment at each location where NO_x emission rate and/or heat input rate is measured (i.e., at the main common stack, any secondary common stack(s), any common pipe(s) and each unit monitoring location), as you would for any other NO_x monitoring configuration. Report <u>only</u> the measured data. Do <u>not</u> report hourly apportioned NO_x emission rate values for the NO_x affected units in RTs 320.

If you have additional reporting questions, contact EPA.

References: EDR v2.1 Reporting Instructions

Key Words: Electronic report formats

History: First published in March 2000, Update #12

Question 24.9

Topic: Cumulative Emissions Reporting

Question: What quarterly and annual NO_x emission rate data, operating hours, and total heat input data should I report in RTs 301 for the common stack NO_x apportionment described in Policy Question 24.2?

Answer: First note that this question does not cover reporting of CO_2 or SO_2 mass emissions.

Report separate RTs 301 for the main common stack, any secondary common stack(s), any common pipe(s), and each unit in the common stack configuration.

Two examples are provided for reference:

(1) If there is a main common stack, one NO_x affected unit, and one NO_x nonaffected unit in the configuration, report three RTs 301 in each quarterly report: one for the common stack, one for the NO_x affected unit, and one for the NO_x nonaffected unit.

(2) If there is a main common stack through which four units exhaust to the atmosphere, two of which are NO_x nonaffected and two of which are NO_x affected, and if the NO_x nonaffected units are monitored at a secondary common stack location, report six record types 301, one at the main common stack, one at the secondary common stack, and one for each unit.

In the RT 301 for the main common stack, report the quarterly and year-to-date NO_x emission rates (lb/mmBtu), operating hours, and heat input (mmBtu) values derived from the common stack monitors. Calculate all quarterly and cumulative emissions and heat input values in accordance with the applicable sections of the EDR v2.1 Reporting Instructions.

In RT 301 for each NO_x nonaffected unit, report all required quarterly and cumulative heat input data (either measured or apportioned as appropriate) and operating hours. Also report the NO_x emission rate if it is individually monitored.

In the RT 301 for a secondary common stack location at which a group of NO_x nonaffected units is monitored (if applicable), report all quarterly and cumulative NO_x emission rate, operating hours, and heat input values derived either from the hourly CEMS measurements made at the monitoring location, or apportioned to that location.

In the RT 301 for a common pipe, report the quarterly and cumulative heat input values and operating hours derived from the hourly heat input rate measurements and fuel usage times at the common pipe.

In RT 301 for each NO_x affected unit, report the quarterly and cumulative heat input and operating hours that were derived using one of the accepted methodologies in this policy. Also report the NO_x emission rate, as apportioned to the unit.

References: EDR v2.1 Reporting Instructions

Key Words: Electronic report formats, NO_x apportionment

History: First published in March 2000, Update #12

Question 24.10

Topic: Missing Data Requirements

Question: What missing data requirements apply in the common stack NO_x apportionment stack configuration described in Question 24.2?

Answer: For the common stack, use the standard missing data procedures in § 75.33.

For monitors located at either the individual NO_x nonaffected units or at a secondary common stack serving only the NO_x nonaffected units use "inverse" missing data procedures for NO_x, CO_2 and flow rate missing data (i.e., substitute the 10th percentile value when the standard missing data procedures in § 75.33 require the 90th percentile value, use the 5th percentile value in lieu of the 95th percentile value, use the minimum value in the look back periods instead of the maximum value and use zeros for the minimum potential NO_x emission rate or minimum potential flow rate for any hours in which maximum potential values would ordinarily be used under Subpart D of Part 75). The owner or operator may petition the Administrator under § 75.66 to use minimum potential values other than zero.

If O_2 data, rather than CO_2 data is used in the heat input rate calculations, use the "regular" missing data algorithm, rather than the inverse algorithm, to provide substitute O_2 data for the heat input rate determinations.

For moisture missing data, use the regular missing data algorithm, unless Equation 19-3, 19-4, or 19-8 is used for NO_x emission rate determination, in which case, use the inverse missing data algorithm.

Use the missing data method of determination codes specified in Table 4a in Part 75.

References: § 75.33, § 75.66

Key Words: Missing data

History: First published in March 2000, Update #12

Question 24.11

Topic: Representation of NO_x Apportionment in EDR

Question: What record types do I use in my quarterly report submittal to identify the agreed upon method of calculating the overall NO_x emission rate for the NO_x affected units when I am using either of the common stack NO_x apportionment methodologies described in Question 24.2?

Answer: Use RT 910 (cover letter text record) to identify the method used to calculate the NO_x emission rate for compliance purposes. The following format (in italics) should be used to identify how the NO_x emission rate is determined for the NO_x affected and NO_x nonaffected units.

I. This common stack EDR submission for the following units uses an approved NO_x apportionment methodology.

Main Common Stack:	[Stack ID]
NO_x affected unit IDs:	[list IDs separated by commas]
NO_x nonaffected unit IDs:	[list IDs separated by commas]
Secondary Common Stack (if applicable):	[Stack ID]
NO_x nonaffected unit IDs:	[list IDs separated by commas]
Common Pipe (if applicable):	[Pipe ID]
NO_x nonaffected unit IDs:	[list IDs separated by commas]

II. Method used to determine NO_x emission rate at the NO_x affected units:

Report one of the following:

(1) Subtractive apportionment methodology using Equation NS-1; or

(2) Simple NO_x apportionment using Equation NS-2.

III. Heat input methodology for the NO_x nonaffected units:

Report at least one of the following:

(1) Duct level flow monitor and diluent monitor; or

(2) Appendix D fuel flowmeter; or

(3) Common stack heat input apportionment using Equation F-21a or F-21b.

References: EDR v2.1 Reporting Instructions

Key Words: Electronic report formats, NO_x apportionment

History: First published in March 2000, Update #12

Question 24.12

Topic: Approvable NO_x Apportionment Methodologies

Question: Are these the only approvable NO_x apportionment methodologies?

Answer: This policy guidance does not preclude other NO_x apportionment methodologies being considered or approved.

References: N/A

Key Words: NO_x apportionment

History: First published in March 2000, Update #12

Question 24.13

Topic: NO_x Apportionment Methodologies Examples

Question: Are there any examples of units which currently have NO_x apportionment situations?

Answer: Several examples will be provided in the future to describe actual NO_x apportionment situations to help explain reporting for these situations.

References: N/A

Key Words: NO_x apportionment

History: First published in March 2000, Update #12

Question 25.13

Topic: Use of Quarterly Operating Data in Fuel Flow-to-load Test

Question: Under Appendix D, for a fuel flow-to-load test, why are we required to use more of the quarterly operating data than is required for the stack flow-to-load test?

Answer: The fuel flow-to-load ratio test requires the use of more of the quarterly data than the stack flow-to-load ratio test, because it is not tied to a baseline test like the stack flow-to-load test, which uses a RATA test at a specific load level as the baseline.

Note that EPA evaluated real fuel flow rate data and responded to comments on the 1998 proposed rule by extending the allowable data exclusion to the lower 25% of the range of operation instead of the lower 10%.

References: Appendix D, Section 2.1.7.1(a)

Key Words: Excepted methods, Fuel flow-to-load

History: First published in March 2000, Update #12

Question 25.14

Topic: Use of Quarterly Fuel Flow-to-load Test

Question: May I perform the quarterly fuel flow-to-load ratio test (as described in Section 2.1.7 of Appendix D) for one quarter and then change my mind and stop reporting the results of that test in subsequent quarters?

Answer: Yes, as long as you fulfill the QA requirements for the fuel flowmeter. If, at the beginning of the calendar quarter in which you decide to discontinue reporting the fuel flow-to-load ratio test results, a historical lookback shows that four or more "fuel flowmeter QA operating quarters" have passed since the last fuel flowmeter calibration, then you must recalibrate the fuel flowmeter prior to the end of the quarter in which the fuel flow to load ratio analysis is discontinued. If fewer than four "fuel flowmeter QA operating quarters" have passed since the last fuel flowmeter calibration you may wait until the "normal" deadline to perform the required recalibration.

Note, however, that if your decision to discontinue performing the quarterly fuel flow-to-load data analysis is based on the results of a failed fuel flow-to-load test, you may not ignore these test results. In this case you must report the results of the failed test and you must follow the procedures of Appendix D, Section 2.1.7.4, "Consequences of Failed Fuel Flow-to-Load Ratio Test." This applies even if the failed fuel flow to load test occurs prior to the completion of four fuel flowmeter QA operating quarters.

References: Appendix D, Sections 2.1.7.3, 2.1.7.4

Key Words: Excepted methods, Flow-to-load test

History: First published in March 2000, Update # 12

Question 25.15

Topic: Alternative Calibration Method for Coriolis Meters

Question: Is a method for Coriolis meters going to be part of future technical corrections?

Answer: The Agency is not aware of any current voluntary consensus standards (ASTM, AGA, ANSI ISO, etc.) that provide an alternative method of calibration for Coriolis type fuel flowmeters. Therefore, the acceptable methods for calibrating Coriolis fuel flowmeters are the methods described in Appendix D, Section 2.1.5.2 (i.e., (1) calibration against a reference meter installed in line with the Coriolis meter; or (2) laboratory calibration by the manufacturer).

References: Appendix D, Section 2.1.5.2

Key Words: Excepted methods

History: First published in March 2000, Update # 12

Question 26.19

Topic: Calculation of Appendix E NO_x Emission Rate Data Availability

Question: Policy Question 26.7 states, "If the NO_x emission rate data availability drops below 90%, EPA may issue a notice to retest based upon Appendix E, Section 2.3." How does EPA calculate the 90% availability?

Answer: The Agency calculates the Appendix E NO_x emission rate data availability from the most recent 2160 hours of data or, if there are less than 2160 hours of data in the previous three years, EPA will base the calculation on all of the data from those three years.

References: Appendix E, Section 2.3

Keywords: Excepted methods

History: First published in March 2000, Update #12

Question 29.1

Topic: LME Methodology Start Times

Question: Can I use the LME methodology for a unit that comes on-line in the middle of a year?

Answer: Yes, provided that you begin using LME when you startup. The main requirement is that you must use the LME methodology to account for all emissions during a year (or ozone season for units subject only to OTC or Subpart H requirements), so it is acceptable to use it starting in the middle of a year if the unit did not operate until then. If your unit is operating on January 1 (or May 1 for Subpart H only units), you must start using LME then or wait until the next year.

References: § 75.19

Key Words: Low mass emissions

History: First published in March 2000, Update #12

UPDATE FOR APPENDIX A: EPA REGIONAL/STATE ACID RAIN CEM CONTACT LIST

REGION V CEM CONTACTS

Illinois EPA Contact -- Replacement

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Acid Rain Program
Quarterly Report Review Process for Determining Final Annual Data

The Acid Rain Program regulations (40 CFR Part 75) require affected sources to submit quarterly data reports for their affected units to the EPA no later than 30 days following the end of each calendar quarter. Each report must be signed and certified by the source's Designated Representative (DR) or Alternate Designated Representative (ADR) for accuracy and completeness. This document describes the Quarterly Report Review Process the EPA uses to evaluate quarterly reports and determine the accepted emissions value for each affected source. These final data are used for allowance reconciliation and compliance determination, and are made available to the public.

All quarterly reports submitted to the EPA are entered into the Emissions Tracking System (ETS) which performs automated data processing. ETS is maintained on the EPA mainframe computer located in Research Triangle Park, NC. The majority of reports are electronically submitted directly to ETS using "ETS-PC," an EPA-developed software program.

The EPA's Quarterly Report Review Process consists of the following steps:

1. **Data Review** -- All quarterly reports are analyzed to detect deficiencies and to identify reports that must be resubmitted to correct problems. The EPA also identifies reports that were not submitted by the appropriate reporting deadline.

2. **Data Resubmission** -- Revised quarterly reports are obtained from sources by a specified deadline to correct deficiencies found during the Data Review process.

3. **Data Dissemination** -- All data are reviewed and preliminary and final emissions data reports are prepared for public release and compliance determination.

These three primary activities are described below in further detail:

1. Data Review

The EPA's Data Review consists of four steps: Diskette Submission Review, Automated Quarterly Report Rejection Criteria Review, Automated Quarterly Report Critical Error Review, and Additional Quarterly Report Audits. These steps are described below:

A) <u>Diskette Submission Review</u> - The number of quarterly reports submitted on diskettes represents a small percentage of the total number of quarterly reports submitted to the EPA. Reports submitted on diskette must be accompanied by a letter containing certification statements signed by the DR or

ADR. Diskette reports are examined and must pass the following rejection criteria (specific to diskette submissions) before they can be transmitted to the EPA mainframe for further automated analysis:

1) All reports contained on a diskette must be resubmitted if the diskette is found to contain a computer virus.
2) All reports contained on a diskette must be resubmitted if the diskette is unreadable (e.g., physically damaged).
3) All reports contained on a diskette in a compressed (*. ZIP) file or self-extracting (*.EXE) compressed file must be resubmitted if the EPA cannot successfully "decompress" the report.
4) Any report contained on a diskette must be resubmitted if the report is unreadable (e.g., wrong file format or corrupted) or missing.
5) Any report contained on a diskette must be resubmitted if the report contains two or more units that are not associated through their stack configuration.
6) Any report for a common or multiple stack configuration (including associated units), contained on a diskette must be resubmitted if the same unit or stack is contained in more than one report. The stack(s) and associated unit-level data must be contained in a single report.

The EPA will reject a diskette report if it fails any of these criteria and will notify the source by telephone that the report must be resubmitted by a stated deadline (typically within five calendar days after the telephone call). On the other hand, if a diskette report passes these criteria, the EPA will transmit it to the ETS for automated review.

B) <u>Automated Quarterly Report Rejection Criteria Review</u> - All reports submitted to ETS on the EPA mainframe are first tested against automated rejection criteria. These criteria determine whether a quarterly report is basically complete and internally consistent according to Part 75 reporting requirements, including the record types (RT) described in the Electronic Data Reporting Format (EDR), versions 1.3, 2.0, and 2.1. The EPA will reject a report if it fails any of the rejection criteria, and will inform the source that the report must be corrected and resubmitted (for tracking purposes, ETS assigns a Status Code of '6' to a rejected report).

Sources using ETS-PC to electronically submit reports to the EPA receive "instant feedback" containing the results from this automated review. After reviewing the feedback, the source may revise the report and resubmit it prior to the submission deadline. If a report is rejected (Status Code 6), the feedback states that the source must correct and resubmit the report to the EPA no later than 30 days from the date of the feedback (see Section 2. Data Resubmission). Sources using ETS-PC have the option of submitting a file numerous times before the submission deadline.

For a report submitted on diskette, the EPA provides the feedback in a letter to the DR approximately 20 days after the submission deadline. The letter will notify the DR of any rejected reports and will request that rejected reports be corrected and resubmitted no later than 30 days after the date of the letter (see Section 2. Data Resubmission). The DR may electronically resubmit the report using ETS-PC instead of resubmitting it on a diskette.

The following rejection criteria are applied during this automated review:

1) Does the report contain a facility identification record (RT100)?
2) Does the report contain only one facility identification record (RT100)?
3) Is the facility identification record (RT100) the first record in the report?
4) Is the plant code (ORISPL) in RT100 contained in the EPA's database of valid ORISPL codes?
5) Are the calendar year and/or quarter in RT100 correct?
6) Are all Unit IDs and/or Stack IDs in the report found in the EPA's database of valid IDs for the plant code (ORISPL)?
7) Does the report contain basic monitoring plan data (RT502 or RT503) for each unit and stack present in the report?
8) Is there a Unit Definition Record (RT502) for each unit ID contained in the report, and is there a Stack/Pipe Header Definition Record (RT503) for each Stack or Pipe ID contained in the report except for reports containing only nonoperational units or stacks?
9) Is there at least one of the following for each operating unit (defined in RT502) or stack/pipe (defined in RT503) in the report: emissions data (RT2xx or RT3xx), QA/QC test data and results (RT6xx), or operating data (RT300)?
10) Is there a summary emissions data record (RT301) for each unit, stack, or pipe reported in the report?
11) Does the Unit/Stack/Pipe ID specified in the ETS mainframe filename appear in the report?
12) Does the report contain only ASCII or EBCDIC-compliant characters (except for RTs 520, 550, 555, and 900/901/910)?
13) Do all records in the report begin with a valid record type code, as defined in EDR v1.3, v2.0, or v2.1?
14) Are SO_2 (RTs 310, 313, 314), CO_2 (RTs 330, 331) and NO_x (RTs 320, 323, 324) present in the file?
15) Does the sum of the hourly records for CO_2 (RT330) multiplied by the operating time (RT300) equal the total quarterly CO_2 tons reported in RT 301?
16) Does the quarterly average NO_x rate calculated from the hourly records for NO_x (RT 320 and 323) equal the reported quarterly average NO_x rate reported in RT301?
17) Are the Bias Adjustment Factors for SO_2 (RT200), Flow (RT220), and NO_x (RT320) greater than or equal to 1.00?
18) Is every hour of CO_2 mass emissions (RT 330) less than 9999 tons?
19) Is every hour of Heat Input Rate (RT 300) less than 99999 mmBtu/hour?
20) Do the concentration (2XX) and mass emission (3XX) record types contain positive emission values?

A report that passes the automated rejection criteria will next undergo an automated critical error review, described below.

C) *Automated Quarterly Report Critical Error Review* - Each report that passes the automated rejection criteria then undergoes a second level of automated ETS software checks to detect critical errors. A report that fails any one of these checks is assigned a "Critical Error" status (Status Code 5) within ETS. In such a case the EPA will inform the source that the report contains critical errors that must be corrected in future submissions or the EPA may reject subsequent reports. In addition, if these errors that are of such a magnitude as to have a "significant" impact on the emissions (as defined in Section 2. Data Resubmission), the quarterly report containing the errors must be resubmitted.

Sources submitting their reports using ETS-PC will immediately receive the results from this automated critical error review in their feedback. After reviewing the feedback, the source may revise the report and resubmit it prior to the submission deadline. For a report submitted on a diskette, the source's DR will receive a feedback letter containing these results approximately 20 days after the report submission deadline. The DR may electronically resubmit the report using ETS-PC instead of resubmitting it on a diskette.

The following critical error criteria are applied during this automated review:

1) Does the sum of the hourly records for SO_2 (RTs 310, 313, and 314) multiplied by the operating time (RT300) equal the total quarterly SO_2 tons reported in RT 301?
2) Does the sum of the hourly records for Heat Input (RT300) multiplied by the operating time (RT300) equal the total quarterly Heat Input reported in RT301?
3) Are the appropriate hourly emissions (RT 302/313 and/or 303/314) present for an Appendix D unit?
4) Is the cumulative annual average NO_x emission rate reported in RT 301 less than 3.00 lb/mmBtu?
5) Are the cumulative annual SO_2 tons emitted reported in RT 301 less than 180,000 tons?
6) Is every hour of SO_2 mass emissions (RT 310, 313, and/or 314) less than 50,000 tons?
7) Is every hour of average NO_x emissions rate (RT 320, 323, and/or 324) less than 4.00 lb/mmBtu?
8) Is the EPA Accepted Value greater than or equal to the Cumulative Annual Value for SO_2, CO_2, NO_x, and Heat Input?
9) Is the sum of the hourly NO_x Mass emissions reported in RT 360 less than or equal to 50 tons?
10) Is the sum of the hourly SO_2 emissions reported in RT 360 less than or equal to 25 tons?
11) Do all data reported in the file fall within the submission quarter?
12) Are the proper program indicators being reported for each unit in RT 505?
13) Do the program indicators reported for each unit in RT 505 match those stored by the EPA?

14) Does the reporting frequency reported for each unit in RT 505 match what is stored by the EPA?
15) Is the fuel type reported in RT 585 appropriate for a Low Mass Emissions (LME) Unit ?
16) Is there a RT 585 for each pollutant (SO2, CO_2, and NO_x Rate)and heat input present in the file?

After a report completes the critical error review, it then undergoes a final level of ETS software checks to detect other types of errors and inconsistencies ("informational errors"). Results from this final analysis are also included in the ETS feedback provided to the DR. ETS generates messages to describe the informational errors (if any) detected in the report. The DR may then revise the report to correct informational errors and resubmit it to the EPA prior to the submission deadline. The DR must also ensure that such errors are corrected so they do not occur in subsequent quarterly reports.

As part of ongoing Quality Assurance (QA) activities, the EPA expects to incorporate certain informational errors into the set of critical error criteria (Status Code 5) or incorporate some informational errors or critical error criteria into the set of rejection criteria (Status Code 6). In other words, errors which are currently identified by ETS for the source to correct in future submissions may become errors which the source must correct before the quarterly report containing the specified error(s) can be accepted by the EPA.

D) Additional Quarterly Report Audits - In addition to the automated data review and feedback described above, the EPA may subject quarterly reports to an electronic audit as a part of ongoing QA activities where additional rejection criteria are applied. If a report fails any of these additional criteria, the EPA may notify the DR and require resubmission of that report, and/or initiate a field audit. Note that resubmission will be required if the audit results indicate that there is a "significant" impact on the reported emissions (as defined in Section 2. Data Resubmission).

Examples of criteria that the EPA may apply during a quarterly report audit are:

1) Are the reported emissions or heat input data consistent (for example, does the sum of the EPA-calculated hourly SO_2 emissions for the quarter multiplied by the operating time equal the quarterly total SO_2 emissions value reported in RT301)?
2) Are the hourly SO_2 mass emissions calculated correctly from the appropriate data elements?
3) Are the hourly NO_x emission rates calculated correctly from the appropriate data elements?
4) Are the hourly heat input rates calculated correctly from the appropriate data elements?
5) Is the correct bias adjustment factor applied for every hour, where appropriate?
6) Have the required quarterly linearity tests been conducted, passed, and reported within the required amount of time?
7) Have the required RATA tests been conducted, passed, and reported within the required amount of time?

8) Have the required daily monitor calibration tests and flow monitor interference check tests been conducted and reported?
9) Has the required quarterly flow monitor leak check test been conducted and reported?
10) Are all monitors used to report emissions data certified?
11) If the quarterly report indicates that a recertification event occurred, were the test results submitted to the EPA?

Finally, the EPA may conduct periodic, independent field audits to assure compliance with Part 75 Continuous Emission Monitoring requirements. These field audits may include activities such as review of on-site records, CEMS inspections, and QA test observations. The EPA expects that when errors or deficiencies are discovered through the field audit program, appropriate corrective action will be taken independently of the quarterly review process described here.

After reviewing the results from these additional audits, the EPA may expand the automated rejection criteria (Status Code 6) or critical error criteria (Status Code 5) applied by the ETS software to include one or more new criteria and implement them in a subsequent calendar quarter.

2. Data Resubmission

As described above in the Data Review section, a source may need to resubmit a quarterly report to correct specified problems. A quarterly report resubmitted to the EPA replaces the previous submission in ETS and at a minimum will also undergo the automated Data Review processes described above. As a result, each resubmitted report must be complete; it must contain all the required data records for emissions, QA/QC, and monitoring plan data. Additionally, a resubmitted report must be accompanied by the Designated Representative Signature and Certification Statements, included in RTs 900/901 or in a hard-copy letter. If the resubmitted report passes all rejection criteria and critical error criteria and the problem(s) identified in the prior submission was also corrected, no further action is required by the DR.

<u>Resubmission Procedures and Deadlines</u>

During the 30-day quarterly report submission period following the end of each calendar quarter, a source that uses ETS-PC to submit its reports may revise and resubmit the reports for that quarter, as necessary, before the quarterly report deadline. As a result, most of the quarterly reports will pass all rejection and critical error criteria before the submission deadline. The remaining reports typically contain problems that caused the EPA to reject them, or they contain other significant inaccuracies identified by the EPA and/or source. These reports will need to be corrected and resubmitted to the EPA. Resubmission deadlines, including final quarterly report resubmission deadlines, are discussed below.

After the quarterly reporting deadline, a source must first contact the EPA before resubmitting a quarterly report so the EPA can determine whether the resubmission is permissible and prepare

ETS to receive the resubmission. If the EPA has rejected the report, the source DR must correct the report and resubmit it by the deadline specified in the feedback, or resubmit it according to supplemental EPA guidance (for example, if the report was rejected during an audit). If a report contains critical errors or contains other significant errors identified by the EPA and/or source (as described below), the report must be resubmitted according to EPA guidance.

If the EPA and/or the source discover an error which impacts the emissions results, the EPA will determine whether the impact is significant and warrants correction of the emissions data through the resubmission of any or all of the quarterly reports for that calendar year. If a source discovers such an error, the source may voluntarily inform the EPA and request that the EPA allow resubmission of the affected report(s). If the EPA approves the request, the source will be instructed to resubmit the quarterly report. As part of this process, the EPA will first consider whether the emissions data will be used for compliance determinations. For example, in the case of a unit where the SO_2 emissions data are used to calculate allowance deductions for compliance with the Acid Rain Program emission limitation requirements, the EPA will require the source to correct the data if the error in the reported SO_2 value was greater than or equal to one ton. The following criteria are used to determine whether a quarterly report should be resubmitted to the EPA:

1) Are the reported SO_2 mass emissions correct within 1.0 ton or less?
2) Is the reported NO_x emission rate correct within 0.01 lb/mmBtu or less?
3) Is the reported heat input correct within 1000 mmBtu or less?
4) Are the reported CO_2 mass emissions correct within10.0 tons or less?
5) Are required quarterly linearity test data and results (RT601 and 602) reported and are they complete?
6) Are required RATA test data and results (RT610 and 611) reported and are they complete?
7) Are the required daily monitor calibration tests and flow monitor interference check tests reported and are they complete?
8) Was the required quarterly flow monitor leak check test reported and was it complete?
9) If a report was submitted via direct electronic submission and the Electronic DR Signature and Certification Statements (RT900 and 901) were submitted instead of a hard copy letter containing the DR certification and signature, are these record types correct, complete, and present?
10) Are the reported emissions or heat input data consistent (for example, the sum of the reported hourly SO_2 emissions for the quarter multiplied by the operating time does equal the quarterly total SO_2 emissions value reported in RT301)?
11) Is the quarterly report free of errors that EPA may determine will have a significant impact on the data quality?

As part of ongoing QA activities, the EPA may modify this criteria.

<u>Final Quarterly Report Resubmission Deadlines:</u>

To finalize the year-to-date emissions data as early as possible in anticipation of annual allowance reconciliation and compliance determination, the EPA has established the following final quarterly report resubmission deadlines for specified calendar quarters:

1st quarter 2000 - Resubmission Deadline: 07/31/2000

2nd quarter 2000 - Resubmission Deadline: 10/31/2000

3rd quarter 2000 - Resubmission Deadline: 12/29/2000

4th quarter 2000 - Resubmission Deadline: 03/30/2001

While the EPA will make every effort to assure that the current year's data are accurate, the EPA will not unilaterally change or correct submitted data without providing notice to the affected source. To the extent practicable, data reconciliation efforts, including resubmissions, will be made in cooperation with the source. Nonetheless, the responsibility to ensure the accuracy of the data submissions remains with the source.

3. Data Dissemination

All quarterly reports received by the EPA are maintained in a central database within ETS. This database is updated when quarterly reports are resubmitted. The EPA regularly extracts data from ETS for public distribution and for annual allowance reconciliation and compliance purposes. Reports containing the preliminary quarterly and year-to-date summary emissions and related data are released to the public on a quarterly basis, approximately 30 days after the end of each calender quarter. Final annual summary emissions data are available approximately nine months after the end of the calendar year.

The summary reports and related data (including individual quarterly reports) can be obtained from the EPA's Acid Rain Program home page on the World Wide Web (http://www.epa.gov/acidrain/edata.html#agg).